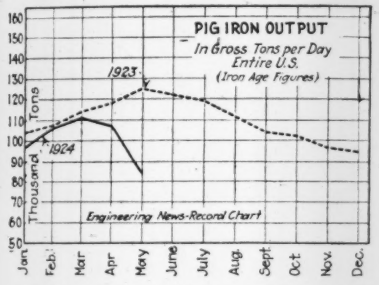
CONSTRUCTION NEWS

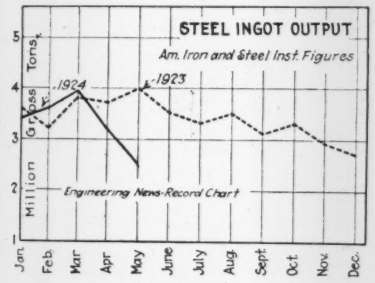
Engineering News-Record, June 26, 1924

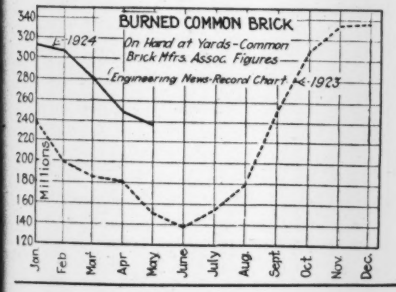
The Construction Barometer

Output and Demand Increased in Lumber, Cement, Brick and Other Building Materials—Iron and Steel Slower—Decline in Contract Letting During Past Three Weeks

A SLIGHT gain in private construction, particularly buildings, during the week ended June 19, was not sufficiently heavy to break the gradual downward trend in contract letting evident since the first of the month. New York City, however, offers an exception to other sections of the country in its consistent gains in volume of building permits. The present depression in iron and steel production and demand is depicted in the accompanying charts. In contrast with the declines in these basic materials is shown the increased demand for brick and steady gains in cement and lumber output. Demand and production of other building materials such as, lime, plaster, glass, hardware and concreting materials are also on the upgrade. Prices have remained fairly steady during the past three weeks with the exception of slight weakenings in lumber and steel.




STEEL INGOT OUTPUT
Am. Iron and Steel Inst. Figures
1924
1923
Million Gross Tons
Engineering News-Record Chart
Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec


BURNED COMMON BRICK
On Hand at Yards-Common Brick Mfrs. Assoc. Figures
1924
1923
Millions
Engineering News-Record Chart
Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec

Engineering News-Record Statistics

Minimum on water-works and excavations, $15,000; other public work, $25,000; industrial buildings, $40,000; commercial buildings, $150,000.

VALUE OF LARGE CONTRACTS LET IN THE UNITED STATES

Week Ended	Public Work	Private Work	Total Contracts
June 5	$27,725,000	$19,189,000	$46,914,000
June 12	19,883,000	13,002,000	32,885,000
June 19	15,360,000	14,283,000	29,643,000
3 Weeks	$62,968,000	$46,474,000	$109,442,000

LARGE BUILDING CONTRACTS—NUMBER AND VALUE

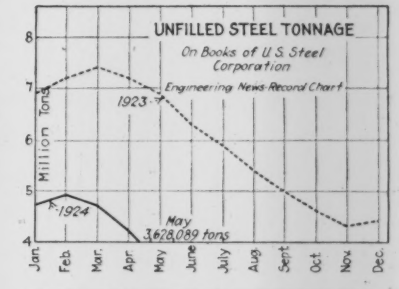
Week Ended	Public No.	Public Work	Private No.	Private Work
June 5	8	$4,801,000	47	$13,899,000
June 12	12	3,558,000	22	11,355,000
June 19	11	3,150,000	32	12,604,000
3 Weeks	31	$11,509,000	101	$37,858,000

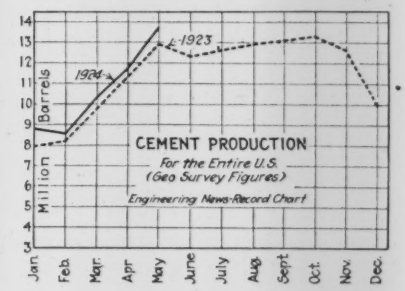
NUMBER OF LARGE JOBS NOW OUT FOR BIDS

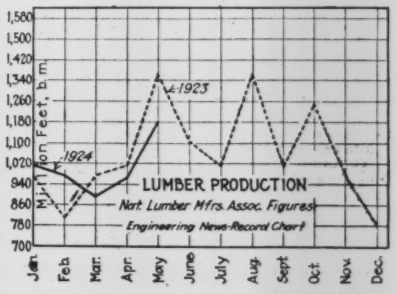
Week Ended	Private	All Buildings	Public Streets and Roads	Public Waterworks and Sewers	Public All
June 5	35	53	95	55	250
June 12	27	48	99	41	236
June 19	12	25	84	29	191

DROP IN PINE LUMBER DURING WEEK

	Quoted on June 26 at	Price was	On
Structurals, Pittsburgh, 100 lb.	$2.10 @2.25	$2.10 @2.30	June 5
Cement, Chi., net bbl.	2.20	2.10	Jan. 24
Pine, N. Y., M. ft.	58.00	60.00	June 19
Fir, San Fran., M.ft.	36.00	38.00	Jan. 24
Common labor, hr.	.56	.55	Apr. 24







Waterworks

PROPOSED WORK

N. H., Berlin—Berlin Water Co., having preliminary plans prepared filtration plant. To exceed $40,000. Weston & Sampson, 14 Beacon St., Boston, Mass., archts.

N. Y., Saranac Lake—Election soon to vote on 22,500 bonds extending water supply system. D. S. Foster, village pres.

N. J., East Paterson — Making plans water and sewer supply systems. H. J. Harder, 129 Market St., Paterson, engr.

Va., Strasburg—See "Sewers."

Ky., Bowling Green—City retained J. W. Hill & Sons, engrs., 45-46 Bodmann Bldg., Cincinnati, O., to investigate better fire protection for High Level Dist. and improvement to water system. $45,000.

Ky., Paintsville—Takes bids about July 20, filtration plant, high service reservoir, pumping station, etc., $70,000. J. N. Chester Engineers., Union Bank Bldg., Pittsburgh, Pa., engrs. Noted May 29.

O., Westerville — July 17, by Village Comn., at office R. Biehl, city mgr., pumping station, etc.; adv. E. N.-R. June 26.

Mich., Flat Rock—Had plans prepared distribution system, 2,440 lin. ft. 8 in. and 18,240 lin.ft. 6 in. c.i. pipe. L. D. Beckley, 811 Owen Bldg., Detroit, engr.

Minn., Hibbing—Plans about 9,000 lin. ft. main extensions between Brooklyn and Kittzville Sts. $20,000. J. H. Murphy, city clk.

Mo., Morehouse — Making preliminary plans waterworks and distribution system, etc. $50,000. F. L. Wilcox, Chemical Bldg., St. Louis, engr.

Ark., Gurdon—Making preliminary plans waterworks, distribution system, and sanitary sewers. $100,000. W. H. Trevillion, mayor.

Tex., Crawford — Election soon $60,000 bonds extensions and improvements to present waterworks and electric systems.

Tex., Dallas—See "Streets and Roads."

Tex., Lufkin—Election soon $55,000 bonds improving present system, extending mains, larger pumping house and new pumping equipment. L. Dunn, city secy.

Tex., San Antonio—Making plans mains and laterals in Peach St. from Goliad St. to river, $90,000; Highland Park from Highland Park to creek at Presa and School Sts., $90,000; from Agrita and San Pedro Aves. to San Pedro Creek, $45,000; South Medina St. from Commerce to Vera Cruz Sts., $30,000; from Ave. D to San Antonio River, 25,000. I. Ewig, city engr.

Tex., Waco—See "Sewers."

Okla., Muskogee — Making surveys new rapid sand mechanical filtration plant. $100,000. J. R. March, City Hall, engr.

Okla., Texola—Voted $47,000 bonds new

Waterworks (Continued)

water system and electric light plant. Gant Baker Co., 1116 West Main St., Oklahoma City, engrs. Noted Apr. 17.

Que., Montreal — Executive Com. soon takes bids mains in 18 streets. $90,262.

Que., Valleyfield—Plans 2 bed filtration plant (rapid type). $90,000. A. Sullivan, town engr.

Ont., Belleville—Plans to install 3½ to 4 m.g. three stage against approximately 300 ft. head centrifugal gasoline driven pump. C. D. Campbell, city engr.

Ont., Ft. William—Soon takes bids 18,000 ft. 24 in. c.i. mains. $125,000. C. B. Symes, city engr.

Ont., Hamilton—Plans 12 in. mains in King St. and Kenilworth Ave. $36,000. Prices wanted on material. W. L. McFaul, city engr.

Ont., North Bay—Soon takes bids extending mains, 1,800 gal. pump, etc. $40,000. F. G. Mackie, town engr.

Ont., Oakville—Plans 20,000 ft. 6 in. c.i. mains, hydrants, valves, etc. $80,000. R. Smith, city engr.

Ont., Oshawa—Plans to install 1,200 gal. 3 stage electric pump in pumping station. W. C. Smith, city engr.

Ont., Sudbury—Making plans 10,000 ft. 6 in. c.i. mains, hydrants, etc. 30,000. F. C. Lane, Town Hall, engr.

BIDS DESIRED

N. Y., Brooklyn — June 27, by N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., New York, mains in Foster, Lexington and Willoughby Aves., here.

N. Y., New York — June 30, by N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., mains in McDonough Pl., Williamsbridge Rd., Crotona Parkway, East 172nd, McClellan, Whittier, Worthen, East 162nd and West 174th Sts., Compton, Cornell, Gillespie, Haight, Hobart, Lurting, Manor, Pugsley, Throgmorton, Waterbury, Anthony, College, Fowler, Mt. Eden and Randall Aves.

N. Y., New York — July 1, by N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., mains in Brandt and Timpson Places, Jerome, Netherland, Oxford, Palisade, Sheridan, Sylvan, Townsend and Walton Aves., Avenue, John, McClellan, East 174th, East 182nd, West 232nd, West 255th and West 256th Sts.

N. Y., Victor — July 7, by Village Trustees, additional water supply system, etc. Hopkins & Field, 349 Cutler Bldg., Rochester, engrs.; adv. E. N.-R. June 26.

N. J., Park Ridge — July 7, by Mayor and Boro Council, drilling artesian well, furnishing and installing pumping machinery and constructing pumping station. H. J. Harder, 129 Market St., Paterson, engr.

La., Shreveport — July 10, extending waterworks and sewerage systems, 2 mi. pipe, 3 mi. water conduit, 7,000 cu.yd. concrete. J. N. Chester Co., Union Bank Bldg., Pittsburgh, Pa., engrs.

Ind., Evansville—June 27, by Bd. City Trustees, 8,000 ft., 2 in. and 15,000 ft. 1 in. wrought iron galvanized water pipe. W. A. Bosse, secy.

S. D., Sioux Falls—July 7, by W. C. Leyse, city aud., improving waterworks, raise side walls, new fireproof roof, trackage for crane, 73 x 95 ft. waterworks building, 38 ft. high. $30,000. J. Schwartz, 404 Minnehehe Blk., archt.

Tex., Mart—July 1, by T. H. Lumpkin, mayor, 4 mi. pipe, earth dam, concrete spillway. Koch & Fowler, Central Bank Bldg., Dallas, engrs. Noted Apr. 17.

Tex., Wortham—Taking bids filter plant. $15,000. Koch & Fowler, Central Bank Bldg., Dallas, engrs.

Wash., Tacoma — June 7, by Bd. Pub. Wks., replacing parts of Green River gravity pipe line, 2,500 ft. 60 in. and 1,100 ft. 48 in. c.i. pipe, from Steel Tank & Gravity Co., Berkeley, Calif., $41,689.

Ont., Windsor—July 17, by Essex Border Utilities Comn., Heintzman Bldg., 10,000 ft. 24 and 36 in. steel or rein.-con. pipe line. J. C. Keith, ch. engr. Gore, Nasmith & Storrie, 625 Confederation Life Bldg., Toronto, consult. engrs.; adv. E. N.-R. June 26.

BIDS RECEIVED

Mass., East Boston (Boston P. O.)—Dept. Pub. Wks., City Hall, Boston, mains and sewers in Ashley St., here, from A. Boniffieldi Co., 52 Powder House Blvd., Somerville, $26,969. Noted June 5.

New York—N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., New York, gate, valves, hydrants, etc., for Williamsburg Conduit of Catskill aqueduct, Contr. 217, from Michigan Valve & Fdry. Co., 3631 Park St., Detroit, Mich., $153,280. Noted June 5.

O., Cleveland—Cleveland Water Dept., filtration equipment for Baldwin Filtration Plant, Contr. 51, from M. L. Bayard & Co. Inc., 20th St. and Indiana Ave., Phila., Pa., $291,525. Noted May 15.

O., Kent—M. P. Tucker, supt. Water Wks., Akron, 2 m.g. extention to coagulation basins, Contr. 235, here, from H. C. Felver, 7016 Euclid Ave., Cleveland, $84,885. Noted June 5.

Colo., Denver—Bd. Water Comrs. City and Denver Co., 1509 Cleveland Pl., intake from Marsten Lake to filter plant, Contr. B, from J. E. Young Constr. Service, Denver, $389,851. Noted May 15.

Calif., Yuba City — Reclamation Dist. 1660, Sacramento, rein.-con. pumping station, discharge conduit, six 24 in. pumps and motors, starters, valves and pressure systems, near here, general contract, from Davison & Nicholsen, 324 West Lafayette St., Stockton, approximately $30,000; electric work, from Butte Electric Equipment Co., 530 Folsom St., San Francisco, approximately $3,000; installing equipment, from Byron-Jackson Co., 55 New Montgomery St., San Francisco.

CONTRACTS AWARDED

N. Y., Brooklyn—N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., New York, mains in Fort Hamilton Parkway, Delamere Pl., Howard, Sutter, 9th, 15th, 16th, M, N and O Aves., 52nd, 54th 56th, 70th, 81st, East 8th, East 9th, East 27th, East 46th, East 52nd, East 54, East 55th,, East 56th, East 98th, West 1st and West 23rd Sts., to W. Norton, 510 West 149th St., $12,740. Noted June 19.

N. Y., Long Island City—N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., New York, mains in Manley, Elmhurst and Lewis Sts., to S. Gallucci, 33 Railroad Ave., Corona, $5,795, mains in Foster, Skillman and Carolin Aves., to Paladino Contg. Co., 437 East 120th St., New York, 9,684. Noted June 12.

N. Y., New York—N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., to C. De Blasio, 339 7th Ave., Mt. Vernon, mains in Delafield, Newton and Sedgewick Aves., $16,685, in Barnes, Kingsland, and Monticello Aves. $7,490; to Draganetti Constr. Co., 1123 Clinton Ave., mains in Andrews, Liebig and Netherland Aves., $8,890; to Beaver Eng. & Constr. Co., 57 Chambers St., in Chittenden and 5th Aves., $16,100, transferring and rearranging connections in 10th Ave., Allen and Hudson Sts., $11,438. Noted June 12.

N. Y., New York—N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., to Norton Eng. & Contg. Co., 510 West 149th St., mains in Gildersleeve, Hudson, Ludlow, Olmstead, Pugsley and Waterbury Aves., Barrette, Belton, Purdy, and East 172nd Sts., $11,300; White Plains Rd., Bryant, Bowler, Gleason, Leland, Noble and Wallace Aves., $8,300; to Melrose Constr. Co., 230 East 162nd St., Morris Lane, Balcom, Brinsmade, Butterick, Calhoun, Emerson, Graff, Harding, Hosmer, Huntington, Lawton, McDowell, Miles, Quincy and Robinson Aves., $12,828. Noted June 12.

N. Y., St. George—N. J. Hayes, comr. Water Supply, Gas & Electriicty, Municipal Bldg., New York, mains in Austin, Cedar and Carlton Aves., etc., to Knight & Demicco Inc., 448 East Tremont Ave., New York, $27,400. Noted June 12.

Pa., Phila.—Bureau Waterworks, 16 in. main in Margaret St., Contr. 673, to J. J. McHugh, 1617 Race St., $32,358; 8 soot blowers, Contr. 678, to Vulcan Soot Blower Co., 1104 Commonwealth Bldg., $3,952; 12,220 ft. c.i. laterals, Contr. 684, to M. Ware Cast Iron Pipe Co., 209 Crozier Bldg., $25,418; 500 kw. generators, Contr. 685, to Genl. Electric Co., Witherspoon Bldg., $22,738. Noted June 19.

Md., Baltimore—Trench excav. for Water Dept., to M. L. Quinn, 5308 York Rd., $23,570. Noted June 12.

O., Columbus—See "Streets and Roads."

O., Toledo—Lucas Co., (e. e. means engrs. est.), to S. L. Cothrel, Jefferson Ave., mains in Water Supply Line 69, $38,905 e. e. $42,278, 74, $23,406 e. e. $26,490, 80, $17,093 e. e. $18,391, 81, $16,076 e. e. $17,084; to J. L. Skeldon, Eng. Co., Nicholas Bldg., in 50, $18,388 e. e. $20,732, 73, $5,948 e. e. $6,703. Noted May 29.

Mich., Detroit — Bd. Water Comrs., to U. S. Cast Iron Pipe Co., East Burlington Ave., Burlington, N. J., 2,000 tons 48 in. pipe $50.95 per ton, 550 tons 36 in. and 250 tons 30 in., $51.95; to Amer. Cast Iron Pipe Co., Acipco St., Birmingham, Ala., 1,500 tons 24 in. pipe $51.55; to Lynchburg Fdry. Co., Peoples Natl. Bank Bldg., Lynchburg Fdry. Co., Peoples Natl. Bank Bldg., Lynchburg, Va., 1,005 tons 24 in. pipe $51.55, all f.o.b. Detroit.

Mich., Detroit—Bd. Water Comrs., G. H. Fenkell, genl. mgr., will lay 4,053 ft. 8 in. c.i. mains in Bella Vista, Fenelon, Gratiot and Washburn Aves., also 6,598 ft. 6 in. c.i. mains in Pinehurst Blvd., Ellsworth, Mendota, Crudder and Welland Aves., by day labor.

Wis., Racine—Racine Co., artesian well, 1,600 ft. deep, at county asylum, to W. H. Gray & Bro., 810 North Clark St., Chicago, Ill., at $4.50 per ft.

Minn., Minneapolis—Two 1 ton trucks for water dept., to W. H. Kuhlmann & Co., 605 Bway., 545 each. Noted May 22.

Minn., Rochester—Constructing 2,000 gal. concrete tank on 90 ft. tower, to Bland Eng. Co., L and Kennedy Sts. N. E., Minneapolis, $33,100. Noted Feb. 7.

Minn., Waconia—To Bruce-Bickelhaupt Des Moines, Ia., mains and pumping equipment, $30,216; to Chicago Bridge & Iron Works, 608 South Dearborn St., Chicago, Ill., tank and tower, $7,000. Noted May 29.

Mo., Hannibal—For 676 tons c.i. pipe and specials, to Natl. Cast Iron Pipe Co., Tarrant City, Birmingham, Ala.; 9 motor driven centrifugal pumps and switchboards, etc., to Dayton-Dowd Pump Co., Quincy, Ill.; general contract river station, force line and distribution system, to Merkle Mchy. & Contg. Co., 1733 Walnut St., Kansas City. Noted June 5.

Tex., Marshall — To Chicago Bridge & Iron Wks., Praetorian Bldg., Dallas, 300,000 gal. steel tank and tower $10,800; to Eddy Valve Co., Praetorian Bldg., Dallas, 25 hydrants $1,139; to N. O. Nelson, 915 McKinney St., Dallas, 55 valves and cocks $994, curb cocks $1,394, corporation cocks $1,029; to Texarkana Pipe Wks., Texarkana, sewer pipe $5,254; to Natl. Cast Iron Pipe Co., Great Southwestern Life Bldg., Dallas, c.i. pipe 281 tons 10 in. $16,790, 177 tons 8 in. $10,753, 41 tons 6 in. $2,491, 17 tons fittings $3,074. Noted May 15.

Colo., Denver—Bd. Water Comrs. City and Denver Co., 1509 Cleveland Pl., 64 m.g. rapid filter on north side Marston Lake, Contr. A, to Dutton & Kendall, 2104 Bway., approximately $1,250,000. Noted May 15.

Wash., Kalama—New water system, 5,000 ft. new gravity pipe line, to Cascade Pipe & Flume Co., 3839 West Florida St., $75,000. Noted Mar. 20.

Sewers

PROPOSED WORK

N. Y., Lackawanna — Common Council plans additions and improvements to disposal plant. $50,000-$60,000.

N. Y., Saranac Lake—Election soon to vote on $30,000 bonds extending storm and sanitary sewers. D. S. Foster, village pres.

Va., Strasburg — Plans election $40,000 bonds extending sewers and water mains. C. W. Heater, mayor.

W. Va., Princeton — See "Streets and Roads."

Mich., Port Huron—Had plans prepared 1¾ mi. trunk sewers 30-72 in. diam., concrete and vitr. pipe at depths from 10- to 20-ft., also 1½ mi. lateral sewers. 10- to 24-in. vitr., or concrete pipe. E. R. Whitmore, city engr.

Mont., Shelby—See "Streets and Roads."

Mo., Higginsville — Making preliminary plans new waterworks, distribution system and sewers in various streets. $90,000. E. T. Archer & Co., 609 New England Bldg., Kansas City, engrs.

Ark., Gurdon—See "Waterworks."

Tex., Dallas—See "Streets and Roads."

Tex., Houston — Voted $150,000 bonds storm and $350,000 bonds sanitary sewers. J. C. McVea, city engr. Noted May 22.

Tex., Lufkin — Election soon $70,000 bonds, extensions to sewerage system, mains, laterals, etc. L. Dunn, city secy.

Tex., Marshall—See "Unclassified."

Tex., Waco — Making plans disposal plants, incl. 2 pumping plants, grit chambers, 8 Imhoff tanks, 4 double sludge tanks, sprinklers, c.i. pipe, vitr. pipe, etc. $350,000. Terrell Bartlett Engrs., Calcasieu Bldg., San Antonio, engrs.

Calif., Alhambra—Defeated $30,000 bonds storm drains, etc. T. B. Downer, city engr. Noted June 5.

Calif., Compton—See Streets and Roads.

Calif., Los Angeles—See Streets and Roads.

Ont., Guelph—Plans 16,500 ft. 9 in. or more vitr. sewers, etc. $55,000. N. S. Nicklin, city engr.

Ont., Merritton—Plans 10,000 to 15,000 ft. 9 in. or more vitr. tile sewers. $100,000. R. Clark, city clk.

Ont., Oshawa—Making plans 20,000 ft. 9 and 15 in. vitr. storm and sanitary sewers. $45,000. W. C. Smith, city engr.

BIDS DESIRED

Massachusetts—See "Waterworks."

Mass., Newton—June 30, by G. E. Stuart, Street Commissioner, City Hall, West Newton, rein.-con. culvert for Newtonville Drain, Adams St. and Tarleton Rd. $250,000.

Sewers (Continued)

New Jersey—July 14, by Mayor and Boro Councils of Bergenfield and Dumont, Council Chamber, Dumont, sewage treatment works and appurtenances. T. F. Bowe, 110 William St., New York City, consult. engr.; adv. E. N.-R. June 26.

N. J., Dumont—July 14, by Mayor and Boro. Council, sewerage system. T. F. Bowe, 110 William St., New York City, consult. engr.; adv. E. N.-R. June 26.

N. J., Hasbrouck Heights (branch of Hackensack)—July 21, by Mayor and Boro. Council, Municipal Hall, sewers and disposal works. City Wastes Disposal Co., 45 7th Ave., New York City, engrs.; adv. E. N.-R. June 26.

Pa., Huntingdon—July 1, by Boro Council, one course rein.-con. paving and curbing 2,500 lin.ft. Moore, Mifflin, 17th and 18th Sts., 24, 27 and 35 ft. $30,000. J. W. Oates, Huntingdon, engr.

Pa., Phila.—July 2, by G. H. Biles, dir. Pub. Wks., outfall pier of Northeast Sewage Treatment Wks., Contr. 1, pier, incl. buildings, bulkhead and sheet piling fence, Contr. 2, mechanical equipment, Contr. 3, electrical equipment, Contr. 4, plumbing equipment, Contr. 5, heating equipment.

W. Va., Fairmont—July 18, by L. N. Satterfield, clk. Marion Co., grading and paving 5 mi. Buffalo Rd., 1 mi. Warrior Fork Rd., 2.7 mi. Bartholomew Fork Rd., Projects 1, 2 and 3, 1.2 mi. Whetstone Rd., Project 4, 5 mi. Whetstone Rd., Project 5, 2.4 mi. Dents Run Rd., Project 6, 1.4 mi. Campbells Run Rd., 1 mi. State Fork Rd., 0.5 mi. Mud Liex Run Rd., Projects 7, 8 and 12, 1.4 mi. Flat Run Rd., Project 9, 0.5 mi. Salt Lick Run Rd., 3.3 mi. Mannington-Clarksburg Turn pike, Projects 10 and 11, all in Mannington Dist. B. H. Palmer, co. engr. Noted Apr. 1.

La., Shreveport—See "Waterworks."

Ky., Poor Fork—See "Streets and Roads."

Mich., Grand Rapids—June 30, by F. H. Locke, city mgr., City Hall, 1st St. Relief Sewer, 3,700 ft. 10 ft. 6 in. by 8 ft. 5 in. special section rein.-con. sewer in open cut, also 1,550 ft. 60 in. circular sewer pre-cast rein.-con. pipe, rein.-con. in open cut, or concrete, segment block or brick in tunnel, etc. C. A. Paige, city engr.

Mich., Jackson—July 9, by City Clerk, rein.-con., brick and steel sewage pumping station. J. E. Whittaker, city mgr.; adv. E. N.-R. June 26.

Wis., Beloit—July 2, by Bd. Pub. Wks., 5,550 ft. 8 and 24 in. sanitary sewers in Public Ave., Broad and Pleasant Sts. Contr. 4; 3,765 ft. 24- to 60-in. storm sewers in Pleasant St., Public and East Grand Aves., Contr. 5 $80,000-$90,000. Former bids rejected. G. E. Helbink, City Hall, engr.

Ark., Pine Bluff — See "Streets and Roads."

Okla., Tulsa—July 31, by City, sanitary out-fall sewers and 2 disposal plants. $450,000. C. Schultz, city engr.; adv. E. N.-R. June 26.

BIDS RECEIVED

Massachusetts—Metropolitan Dist. Comn. 1 Ashburton Pl., Boston, in Mill Brook Valley sewer, Div. North Metropolitan sewer, in Medford, from General Contg. Co., Bath, Me., $117,356.

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, (e. e. means engineers estimate), from B. Peconi & Son, Inc., 570 18th St., sewers in 55th St. 89% (e. e. $5,586), East 43rd St. 89% (e. e. $2,186); from Nazzerro & Querriero, West 9th St. 83.39% (e. e. $4,908), East 34th St. 82.82% (e. e. $4,782), East 27th St. 83.98% (e. e. $4,574), 77th St. 93.41% (e. e. $1,279); from Tomassetti & Co., Inc., 1133 60th St., Minna St. 86.86% (e. e. $3,573); from C. F. Vacharas, Inc., 645 40th St., East 13th St. 75.75% (e. e. $400). Noted June 12.

Pa., Phila.—Bureau Surveys, June 19, from J. Lombardi Co., Lincoln Bldg., sewers in J St. $142,963; from P. & J. Ellis, 3342 North 11th St., Tyson St. $71,668, Cranford Ave. $162,964 Benner St. $77,828; from H. Roberts Electric Supply Co., 1101 Race St., electric testing instruments $845; sedimentation units, North East Sewage Treatment Works, from W. T. Pangborne & Co., 1927 West Montgomery Ave., $2,296, from Roberts Filter Co., Darby, Contr. 1 $74,450, Contr. 3 $100,000, Contr. 4 $100,000.

Md., Baltimore—Mayor and City Council, 14,641 lin.ft. 8 and 10 in. vitr. sewers, etc., in Dists. 1-B, 33-C and 47-D, Contr. 212, from P. Marocco, 609 South Decker Ave., $46,478. Noted June 5.

Wis., Athens — A. A. Kreutzer, village clk., disposal plant and sewers in various streets, from C. Axelson, Athens, $23,529. Noted May 29 under "Waterworks."

Wis., Milwaukee—Dept. Pub. Wks., June 13, 8-24 in. vitrified clay sewers in Falling Heath Pl., Delaware, Holt, Illinois, Kinnickinnic, New York, Ohio and Pennsylvania Aves., from Wenzel & Henoch Co., 498 27th St., $37,963; 8- to 15-in. vitrified sewer in Indiana Ave., from W. T. Werner, 675 Hi-Mount Blvd., $10,032.

Calif., Stockton — City, College of the Pacific, Sewer, from W. J. Tobin, 527 Santa Ray Ave., vitr. pipe $31,167, concrete pipe $27,997.

CONTRACTS AWARDED

R. I., Providence—Concrete sewer in Manton Ave., to Bruno & Petitti, 18 Tremont St., Boston, Mass., $149,299. Engrs. est. $150,000. Noted Apr. 8.

N. Y., Brooklyn—E. Riegelmann, boro. pres., Boro Hall, to Booth & Flinn, Ltd., Green and Tompkins Aves., repairing relief sewers in Greene, Lewis and Marcy Aves., etc., $198,180; to Manmill Constr. Co., 2035 Douglas St., sewers in 65th St. 83.5% (e.e. $13,876) 68th St. 85.8% ($5,394) 7th Ave. 92.5% ($1,328) to S. Coenzo, 678 Glenmore Ave., East 32nd St. 84.75% ($11,779); to Tomasetti & Co., Inc., 1133 60th St., Colonial Rd. 83% ($7,038); to C. F. Vacharas, 645 40th St., 9th Ave., 111% ($1,852); to R. Iovine, 678 Glenmore Ave., Mansfield Pl. 75% ($1,400). Noted June 12.

N. J., Orange—G. C. Bergen. purch. agt. Essex Co., Court House, Newark, 5,710 ft. 12- to 24-in. rein.-con. storm sewers in Scotland St., here, to Luce & Tozzi, 321 Central Ave., $25,448. Noted May 29.

O., Cleveland—Cuyahoga Co., 11,500 ft. 8- to 36-in. tile sewers in Impvt. Dist. 59, to Langahan Constr. Co., Marshall Bldg., $55,410. Noted June 19.

O., Cleveland—Cuyahoga Co., 11,500 ft. 8- to 36-in. tile sewers in Impvt. Dist. 54, to D. Zullo, 10614 Frank Ave., $117,795. Noted June 5.

O., Cleveland—For 6,120 ft. 12- to 24-in. tile sewer in Broadview Rd., Denby Ave. and West 116th St., to Hadded & Kairal Constr. Co., 415 Eagle Ave., 36,477; Grand Division Ave., to W. McDowell & Son, 10319 Miles Ave., $17,215; 9,976 ft. 12- to 24-in. vitr. tile sewer East Blvd., Lacota Ave. and East 146th St., to Sprague & Burkhart, 11811 Browning Ave., $23,096; 2,500 ft. 12- to 24-in. vitr. tile sewer in East 143rd St., to E. Cesa & Son, 2624 Baldwin Rd., $11,450.

O., Columbus—See "Streets and Roads."

O., Garfield Heights (Cleveland P. O.) — Vitr. clay sewers in 5 streets, to A. Lanese Co., 15820 Kinsman Rd., Cleveland, $38,000.

O., Toledo — W. T. Jackson, dir. Pub. Serv., for Relief Sewer 1432, 10,527 lin.ft. 30- to 96-in. concrete segmental block pipe, to Anderson & Campbell, 81 Peterboro St., Detroit, Mich., $264,396.

O., Wadsworth—Sewage treatment plant, 2,456 ft. 6- to 12-in. tile pipe, 1,400 cu.yd. concrete, etc., to Lodi Concrete Co., Lodi, $87,327.

Mich., Detroit—Dept. Pub. Wks., to A. Rossi, 1338 Brady St., Easton Ave. Arm Sewer West of Livernois Ave. Sewer, $36,668; to J. Rossi, 4148 Seneca Ave., Easton Ave. Arm East of Wyoming Ave. Sewer, $38,651; Mack Ave. Arm West of Ashland Ave. Sewer, $27,324; to J. A. Mercier, 616 Hammond Bldg.; Harper Ave. Arm West of Bedford Ave. Sewer, $17,640; to C. R. Lennane & Co., 2631 Woodward Ave., Tireman Ave. Arm East of Wyoming Ave. Sewer; to Michigan Constr. Co., Detroit, Sewer 4126, $6,320; to Detroit Drainage Constr. Co., 5099 LeMay Ave., Sewer 4128 $19,227; to J. Leo, 1762 Puritan St., Sewer 4125 $1,450, Sewer 4138 $725; to Central Constr. & Eng. Co., Detroit, Sewer 4139 $4,841; to Western Constr. Co., 1208 Ford Bldg., Sewer 4141 $2,290; to Cousino-Mercier Co., 13183 Wark St., Sewer 4127 $1,542.

Wis., Kenosha—C. M. Osborn, city mgr., 48 and 30 in. rein.-con. and 12- to 24-in. vitr. sanitary and storm sewers in Clarion Court, Butcher, Salem, Park and Sheridan Aves., Wood and Garfield Sts., etc., to M. Thomsen, 1020 Salem Ave., $82,937. Noted May 22.

Wis., Milwaukee—Metropolitan Sewerage Comn., 508 Market St., 6,267 lin.ft. 18 and 21 in., terra cotta pipe and 335 lin.ft. 12 in. storm sewers in National Ave. extension, to Wenzel & Henoch, 498 27th St., $90,671.

Ia., Ames—For 12,600 lin. ft. 8 in. vitr. sewers, 35 manholes, 3,350 lin. ft. 10- to 15-in. storm sewers, 22 catch basins 8 manholes, to Blakemore, Haugsted & Armstrong, Nevada, Ia. To exceed $25,000. Noted June 6.

Minn., Duluth—See "Streets and Roads."

Kan., Burlington—Disposal plant, 1,600 ft. 12 in. vitrified sewers, etc., to C. J. McCoy Constr. Co., Emporia, $38,529. Engrs. est. $30,000. Noted Oct. 4.

Mo., St. Louis—Sect. B, North Baden Public Sewer, 3,525 ft. 11 ft. 2½ in. x 14 ft., rein.-con. horseshoe, to G. G. Prendergast & Co., 6157 Wagner Ave., $174,769, engrs. est. $208,000; Sect. A, Ohio-Montrose Public Relief, 4,077 ft. 7 x 7 ft. horseshoe concrete lined in tunnel, 1,943 ft. 5 x 5 ft. horseshoe, seven shafts to tunnel, 200 ft. 7 x 7 ft. horseshoe rein.-con. in open cut, also 2,100 ft. 8- to 66-in. sewers, to United Constr. Co., Pontiac Bldg., $301,861, engrs. est. $305,000. Noted June 12.

Tex., Marshall—See "Waterworks."

Calif., Glendale — See "Streets and Roads."

Calif., Niles—Niles Sanitary Dist., disposal system, to Deuble & Garden, 386 15th St., Oakland, $39,975. Noted June 12.

Calif., Suisun—See "Streets and Roads."

Que., Montreal—To Toussaint Bros., 2353 St. Denis St., 740 ft. 12 in. tile sewer in Gouin Blvd. $5,594, 594 ft. 2 x 3 brick sewer in Lafond St. $10,851, 642 ft. 2 x 3 brick in 12th Ave. from Masson St. to Rosemount Blvd. $11,450, and 1,320 ft. in 12th Ave. from Rosemount Blvd. to Belanger St. $25,744, 581 ft. 14th Ave. $11,106, 633 ft. 13th Ave. $11,907. Noted June 5.

Que., St. Jerome — Will lay 20,000 ft. clay pipe sewers in Parant, Laviolette, St. Adele, St. Georges, St. Sauveur, St. Jovite and St. Alexander Sts., by day labor. $80,000. A. Latour, city engr.

Ont., Chippawa—For 30,000 ft. 9 in. up vitr. sewers, to F. F. Fry Ltd., 43 Scott St., Toronto. Engrs. est. $70,000. Noted May 22.

Ont., Toronto—For 2 mi. South Parkdale and Exhibition brick trunk interceptor sewer, to J. H. McKnight Constr. Co., 88 St. Davids St., $80,045. Engrs. est. $80,000.

Bridges

PROPOSED WORK

Massachusetts — Metropolitan Dist. Comn., 1 Ashburton Pl., Boston, plans Arsenal St. bridge over Charles River between Boston and Watertown. $175,000. J. R. Rablin, comr.

N. Y., Ebenezer—Election June 27, $35,000 bonds for rein.-con. bridge over Cazenovia Creek.

N. J., Salem—Bd. Freeholders Salem Co., plans bridge over Penns Neck. $100,000. H. B. Keasbey, Salem, engr.

Ind., Evansville—States of Indiana, Indianapolis, and Kentucky, Frankfort, plan bridge over Ohio River, near here. To exceed $1,000,000.

Tex., San Antonio—Making plans bridges rein.-con. and steel, 4th St. $25,000; Martin St. $25,000; Market St. $30,000; South Prest St. between Villita and Market Sts. and South Prest St. between College and Crockett Sts., $25,000 and $50,000 respectively. I. Ewig, city engr.

Ont., Hamilton—Making plans rebuilding Garth St. Bridge, cement and steel. $25,000. W. L. McFaul, city engr.

BIDS DESIRED

New Hampshire — See "Streets and Roads."

Massachusetts—July 3, by Metropolitan Dist. Comn., 1 Ashburton Pl., Boston, altering, strengthening, repaving and repairing, etc., Harvard Bridge over Charles River, between Boston and Cambridge. $600,000. R. J. Rablin, comr. Noted May 22.

Mass., Holyoke—July 1, by Bd. Pub. Wks., City Hall, 3 span 110 ft. steel deck bridge, 60 ft. across second level canal on Cabot St. $40,000. F. E. Pond, City Hall, engrs. Noted May 1.

Pa., Phila.—July 16, by Delaware River Bridge Joint Comn., 806 Widener Bldg., for superstructures of Philadelphia and Camden, N. J., approaches of bridge over Delaware River, Contrs. 17 and 18. G. Pinchot, chn.; adv. E. N.-R. June 26.

Pa., Norristown—July 15, by W. C. Irvin, controller Montgomery Co., rein.-con. bridge No. 278 over Perkiomen Creek at Schwenksville, Perkiomen Twp.; adv. E. N.-R. June 26.

Georgia—July 2, by State Hy. Dept., East Point, steel and concrete bridges in Clay, Telfair, Jefferson, Whitfield, Bryan, Effingham, Jackson, Walker, Raburn, and Franklin Counties. W. R. Neel, highway engr.

Florida—July 23, at office of Bay Biscayne Impvt. Co., 105-107 Northeast 2nd Ave., Miami, for 12 rein.-con. bridges, 2 double-leaf Bascule type steel draw bridges across Biscayne Bay, between Miami and Miami Beach, Dade Co. H. Stanley, Ft. Landerdale, consult. engr.; adv. E. N.-R. June 26.

Fla., Key West—July 7, by J. O. Kuchheiner, chn., Bd. Comrs. Monroe Co., steel draw-bridge, piers, abutments, operating machinery, fender system, etc., at North End of Key Largo, over Barnes Sound. $75,000. Noted May 8.

Louisiana—July 2, by State Hy. Dept., Reymond Bldg., Baton Rouge, 53 creosoted pile trestle bridges on Hammond-New Orleans Highway, in Tangipahoa and St.

Bridges (Continued)

John the Baptists Parishes, 628,000 ft. creosoted pine lumber, 616,000 ft. untreated lumber and 74,000 creosoted piling. J. M. Fourmy, state highway engr.

Kentucky—July 15, by State Hy. Dept., Frankfort, one 100 ft. steel span bridge, concrete substructure, over Georges Creek, Sta. 634-90, Lawrence Co.; two 162 ft. and three 50 ft. steel span bridges, concrete abutments, over Salt River, Sta. 966-25, Bullitt and Spencer Counties. J. S. Boggs, highway engr.

Ill., Chicago — July 9, by South Park Comrs., 57th St. and Cottage Grove Ave., rein.-con., super-structure and pile foundations for South Park Boulevard viaduct. Condron Co., consult. engrs.; adv. E. N.-R. June 26.

Ia., Marengo—July 1, by Auditor Iowa Co., 7 concrete box culverts, one 90 ft. truss span, one 3 span through truss bridge 343 ft. long. $25,000. F. A. Peterson, co. engr.

Tex., Austin — Travis Co. taking bids concrete bridges and metal culverts on Pflugerville - Cameron - Dessan - Merrilltown Rds., 790 cu.yd. concrete, 58,277 lb. reinforcing, 2,237 cu.yd. structural excav., etc. O. Leonard, co. engr.

BIDS RECEIVED

Massachusetts—Metropolitan Dist. Comn., 1 Ashburton Pl., Boston, Western Ave. bridge, over Charles River from Brighton to Cambridge, from T. Stuart Sons, Newton, $269,212.

Pennsylvania—See "Streets and Roads."

Ohio—Dept. Hys. & Pub. Wks., Columbus, June 13, bridge and approaches on Sect. "G-1" Akron-Canfield Rd., Mahoning Co., from N. R. Porterfield, Youngstown; $15,965; concrete girder bridge Sect. "G" Marion-Galion Rd., Morrow Co., from C. A. Mauer, Sidney, $3,995; new abutments Sect. "L" Mt. Gilead-Mansfield Rd., Morrow Co., from Coharis & Gerkins, Toledo, $8,372; bridge approaches Sect. "D-1" Portsmouth-Columbus Rd., Pike Co., from Ogonea Bridge Co., Lebanon, $16,210. Noted June 5.

Ohio—See "Streets and Roads."

Missouri — State Hy. Dept., Jefferson City, June 10, two 10 ft. rein.-con. slab spans, etc., over stream, St. Clair Co., from C. F. Johnson, Warrensburg, $1,701; two 16 ft. rein.-con. slab spans, etc., over Dry Branch, St. Francois Co., from J. T. Moss, Webster Groves, $2,132; two 10 ft. rein.-con. slab spans, etc., over creek, Henry Co., from A. T. Cook, Ottowa, Kan., $2,737; one 40 ft. rein.-con. deck girder span over stream, Warren Co., from C. P. O'Reilly & Co., Wainwright Bldg., St. Louis, $6,772; two 10 ft. rein.-con. slab spans, etc., over creek, St. Louis Co., from Public Wks. Constr. Co., Wainwright Bldg., St. Louis, $2,774; one 80 steel truss span, etc., over Cooper Creek, Henry Co., from M. E. Gillioz, Monett, $9,504; two 20 ft. concrete slab spans, etc., over Wet Fork Creek and two 20 ft. rein.-con. slab spans over Wolf Creek, both Wayne Co., from C. T. Fogle Constr. Co., Jefferson City, $5,421 and $6,610 respectively; twenty-two 25 ft. I beam spans, etc., over overflow of Grand River and Shoal Creek, Livingston Co., from Pittsburg-Des Moines Steel Co., Tuttle and Southwest 10th Sts., Des Moines, Ia., $26,864; one 25 ft. rein.-con. deck girder, etc., over North View Branch, and one 80 ft. steel truss span, etc., over Niaugua Creek, both Webster Co., from C. F. Johnson & Sons, Buffalo, $2,632 and $8,831 respectively; one 40 ft. rein.-con. deck girder over Little Honey Creek, and one 40 ft. rein.-con. deck girder over Honey Creek, both Lawrence Co., from Eastly Bros. & Hartly, Aurora, $6,480 and $6,510 respectively. Noted June 5.

Calif., Los Angeles — See "Streets and Roads."

CONTRACTS AWARDED

Pa., Phila.—Delaware River Bridge Joint Comn. at Room 806, Widener Bldg., completion of anchorage bridge over Delaware River between here and Camden, N. J., Contr. 15, to Keystone State Constr. Co., 210 South 13th St., $2,977,450. Noted May 22.

O., Milford—Hamilton Co. (Cincinnati) substructure for 260 ft. steel truss bridge, to E. M. Scully, 1431 Eastwood Ave., Columbus, $64,860, engrs. est. $70,500; superstructure for same incl. 800 cu.yd. 1:2:4 concrete, 1,000 ft. 20 in. concrete piling, etc., to D. P. Foley, 3209 Boudinot Ave., Cincinnati, $25,860, engrs. est. $28,300. Noted June 12.

Ind., Lawrenceburg — Dearborn Co., Wilmington Bridge, concrete arch, to C. Runck, Jr., 1st Natl. Bank Bldg., Cincinnati, O. $69,933. Engrs. est. $75,000. Noted June 19.

Idaho — Bureau of Highways, Boise, 3 bridges on North and South Highway, Potlatch Hy. Dist., Latah Co., to F. W. Straw, Lewiston, $4,172, $6,994 and $29,439 respectively.

Oregon—State Hy. Comn., Salem, 3 span, rein.-con. bridge, in Natl. Forest, Josephine Co., to J. Varner, Grants Pass, $29,225.

Ore., Harrisburg—State Hy. Dept., Salem, steel and concrete bridge, three 180 ft. spans and 1,675 ft. trestle, over Willamette River, here, to Portland Bridge Co., Yeon Bldg., Portland, $183,200. Engrs. est. $225,000. Noted May 15.

California — State Hy. Comn., Sacramento, reflooring and painting nine 80 ft. steel span bridge type B wearing surface, over Dry Creek, near Galt, Sacramento and San Joaquin Counties, to M. B. White, Stockton, $15,252. Engrs. est. $24,438. Noted June 12.

Dam

PROPOSED WORK

Que., Ulverton—See "Unclassified."

Railways

PROPOSED WORK

Massachusetts—City of Boston plans extending Boston Elevated Railway of Rapid Transit Line from Welles Ave., Dorchester to Ashmont Station, Ashmont. E. R. Stringer, Transit Dept., 1 Beacon St., Boston, ch. engr.

Washington—T. R. Beeman, engr. King Co., Seattle, preparing plans track undercrossing beneath Chicago, Milwaukee & St. Paul Ry. Company's lines west of Renton on Pacific Highway, to shorten route from East Valley. $40,000. King Co. will pay 60% and railroad 40% of cost.

BIDS DESIRED

Michigan—Calumet & Hecla Consolidated Copper Co., Calumet, taking bids 9.3 mi. single track railroad, near Calumet, Houghton Co.; adv. E. N.-R. June 26.

CONTRACTS AWARDED

Quebec—Montreal Tramways Co., Craig St. W., Montreal, will construct new tracks on concrete slab foundation, standard 6 x 8 wooden ties, 2 ft. centers and steel tie rods 6 ft. centers, electric welded joints, in 1.606 mi. Cote Des Neiges Rd. 63,000, 0.585 in Mt. Royal Ave. $47,000, 1.314 mi. Girouard Ave. $60,000, 0.125 mi. St. James St. $20,000, 0.535 mi. Notre Dame St. from Inspector to McGill Sts. $43,000, 0.178 mi. Notre Dame St. from Fort to Colborne Sts., $14,500, 1.14 mi. Frontenac St. $68,000, 0.216 mi. Craig and Little Craig Sts. $99,000, 0.375 mi. Dorchester St. $30,000, 0.482 mi. Greene Ave. $29,000, 0.242 mi. Guy St. $19,500, 0.227 mi. Wellington St. $18,000, 0.615 mi. St. Denis St. $50,000, 0.254 mi. Viau St. $51,000, 1.139 mi. Iberville St. $45,000, and 2 mi. Cartierville line double track and bridge under Canadian Pacific Ry. tracks, $70,000, all by day labor. P. A. N. Seurot, ch. engr.

Excavation, Drainage, Irrigation

PROPOSED WORK

Tex., El Paso—Hudspeth Co. Conservation & Reclamation Dist. 1, soon takes bids 40 mi. open drains, 2,000,000 yd. excav., 30 mi. main canal, 800,000 yds. excav. $150,000. C. M. Ainsworth, Ft. Hancock, engr.

Calif., Tracy—Banta-Carbona Irrigation Dist. plans election to vote on $705,000 bonds, pumping plants, pipe line canal, bridges, railroad crossings, 135,000 cu.yd. excav., in laterals, dredging intakes, etc. W. D. Harrington, Tracy, engr.

BIDS DESIRED

La., Shrewsbury—July 1, by Bd. Comrs. 4th Jefferson D. D., 50 mi. drainage canals and 16 mi. protection levee in Dist. 3. $1,250,000. A. T. Dusenbury, 409 Marine Bank Bldg., New Orleans, consult. engr. Noted Apr. 24.

CONTRACTS AWARDED

Miss., Clarkedale—Yazoo-Mississippi Delta D. D., 6,900 ft. levee, 15.3 ft. average height, at Polks Landing, 230,000 cu.yd. levee, 38,000 cu.yd. banquette, 13,000 cu.yd. muck ditch, to J. W. Noble, Fayette, $0.256 per cu.yd., total $71,936. Noted June 6.

Wis., Milwaukee — J. H. Fowles, secy. Sewerage Comn., 508 Market St., backfilling around sewage disposal plant, Jones Island, to W. H. Gillen, 902 Summit Ave., 80,000 cu.yd. dredging at $0.875 per cu.yd. and 450 tons riprap at $10 per ton. Noted June 19.

Tex., Dallas—First Baptist Church, Magnolia Bldg., excavation for 6 story and basement, 131 x 131 ft. church, St. Paul & San Jacinto Sts., to R. J. Estep & Co., Wilson Bldg., $25,000. Noted Jan. 17 under "Buildings."

Okla., Oklahoma City—Enlarging drainage ditch at west side of reservoir, grading and bank protection, 300,000 cu.yd. excav., to A. A. Davis & Co., Grain Exch. Bldg., $74,133. Engrs. est. $80,000.

Streets and Roads

PROPOSED WORK

Massachusetts—Dept. Pub. Wks., State House, Boston, plans rebuilding Hingham St., in Rockland. $30,000. W. F. Williams, comr.

Mass., Boston—City Planning Bd., City Hall, plans widening Chauncy St. between Summer and Bedford Sts. $70,000. F. H. Fay, chn.

Mass., Brighton (Boston P. O.)—Dept. Pub. Wks., City Hall, Boston, plans reconstructing and improving Richards St., here. $25,000. J. A. Rourke, comr.

Mass., Natick — Bd. Pub. Wks., plans reconstructing East and West Pond Sts. $30,000.

Mass., Springfield — City Planning Bd., City Hall, plans 80 ft. boulevard from Locust St., to Columbus Ave. $125,000. F. C. Parker, chn. Bd. Pub. Wks.

N. Y., Little Falls—Common Council and J. J. Kearns, mayor, making plans paving various streets. $100,000. Address City Eng. Dept., engrs.

N. Y., Syracuse—Bd. Pub. Wks. takes bids about July 1, paving various streets. $250,000-$300,000. Address J. L. Schmeider, comr.

Pa., Rankin—Election July 24, $175,000 bonds street improvement.

W. Va., Princeton—Voted $100,000 bonds for road and sewer improvements. W. A. Cooper, Princeton, engr. Noted Apr. 10.

W. Va., Sutton — Voted $52,000 bonds paving Pike and other streets. J. Blackwood, town clk.

Miss., Philadelphia—Neshoba Co. voted $250,000 bonds for roads and bridges.

Miss., Quitman—Clark Co. election July 1, $100,000 bonds about 30 mi. gravel roads.

La., New Orleans — A. Black, comr. Dept. Pub. Property, submitted tentative program for paving work during 1925 to Comn. Council, incl. 20 streets newly paved, and extensions and connections on 5 streets.

Tennessee — State Dept. Hys. & Pub. Wks., Nashville, takes bids about July 16, grading and surfacing, probably concrete, 12 mi. Columbia-Mt. Pleasant Rd., 18 ft., Maury Co. J. G. Creveling, highway comr. Noted May 22.

Tennessee — State Dept. Hys. & Pub. Wks., Nashville, making surveys improving approximately 15 mi. Knoxville-Grainger Co. line Rd., on Memphis-Bristol Trunk Route, Knox Co. G. J. Creveling, highway comr.

Ky., Henderson — Making surveys and plans paving Main, 1st, 2nd, 3rd and Letcher Sts. $45,000. S. H. Kimmel, city engr. Noted June 12.

Ky., Murray—Plans improving 7 blocks Main St., 17,000 sq.yd. concrete, 6,600 lin. ft. curbing, 6,000 cu.yd. excav. $55,000. H. C. Doran, Murray, engr.

Ohio—Dept. Hys. & Pub. Wks., Columbus, cancelled bids June 13, grading, bridging and paving 3.331 mi. Sect. "G" Columbus-Cincinnati Rd., Butler Co., Sect. "B-1" Kenton-Upper Sandusky Rd., Wyandot Co., both with bituminous macadam, asphalt or tar; grading 1.598 mi. Sect. "D-2" Woodsfield-Clarington Rd., Monroe Co. Noted June 5.

O., Zanesville — Muskingum Co., plans surfacing 4 mi. Marysville Pike, tar bound macadam on limestone, $70,000; 4 mi. South River Rd., brick or cement, $90,000, both 20 ft. wide.

Ind., Anderson—Plans concrete paving and cement curbing 9th and Rocky Sts. $57,000. M. H. Donney, City Hall, engr.

Ind., Frankfort—Clinton Co. plans grading and graveling 2.6 mi. Grace Smith Rd., 24 ft. $27,049. L. Fisher, Frankfort, engr.

Ind., Goshen—Elkhart Co. plans grading and graveling 17,807 ft. Husband Rd., 18 ft., $26,853. C. L. Kinney, Goshen, engr.

Ill., Belleville—Plans grading, curbing and surfacing in Twelve Oaks addition, 6,400 ft. rein.-con., brick on concrete or asphaltic concrete, $63,000. C. A. Heinzelmann, City Hall, engr.

Wis., Juneau—Making plans new pavements on Maple Ave., Mill, South Main, Center, West, North and Depot Sts. To exceed $25,000. O. A. Schumacher, city clk. Engineer not selected.

Ia., Eddyville — Plans paving about 8 blocks Walnut St. $30,000. Brown & Cook, Ottumwa, engrs.

Ia., Marshalltown—Plans paving North 3rd Ave., about 20,005 sq.yd. 8 in. rein.-con., and rebuilding 1,600 lin.ft. curbing. $45,000. O. C. Herm, city engr.

Kan., Goodland—Sherman Co. soon takes bids grading 8.523 mi. Federal Aid Project 202-A, 28 ft. H. R. Johnson, co. engr.

Kan., Madison—Plans improving 7 blocks West Main, 3rd and 7ts Sts., etc., 15,000

Streets and Roads (Continued)

sq.yd. vertical fibre brick paving, 4,200 lin. ft. curbing, 4,500 cu.yd. earth and 300 cu. yd. rock excav. $60,000. V. V. Long & Co., 1300 Colcord Bldg., Oklahoma City, engrs.

S. D., Sioux Falls—Plans paving, etc., about 11,773 sq.yd. Dakota Ave. between 3rd and Russell Sts. $30,000. S. B. Howe, city engr.

Mo., St. Louis—Bd. Pub. Serv., 208 City Hall, making plans grading and paving with asphalt, willite, warrenite, asphaltic concrete, vitr. brick, Kentucky rock asphalt or concrete, Dewey Ave. 8,500-$10,400, Elias Ave. $26,200-$29,100, Ester Ave. $8,100-$9,402; grading, curbing and paving with concrete, vitr. brick, warrenite, asphalt, willite or asphaltic concrete, Famous Ave. $16,200-$18,700, Pennsylvania Ave. $5,100-$5,700, Leola Ave. $14,600-$16,600, Robert Ave. $20,400-$23,500, Thekla Ave. $9,800-$10,900, West Park $10,000-$11,600, Wilson Ave. $14,000-$14,900; grading, adjusting or replacing curb and paving with warrenite or willite, Westminster Pl., $31,000-$31,500. W. W. Horner, 300 City Hall, engr.

Tex., Anahuac — Chambers Co. voted $100,000 bonds roads in Precinct 1. H. J. Walger, Anahuac, engr. Noted May 8.

Tex., Anderson — Grimes Co. making plans constructing various roads. $50,000. Quarels, Adams & Gaines, Anderson, engrs.

Tex., Bellville—Austin Co. plans grading and rein.-con. paving, etc., 17.5 mi. State Highway 36, 18 ft. $625,000. H. Schroeter, Wallis, co. engr.

Tex., Centerville—Leon Co. voted $140,000 bonds improving Teague-Navasota Rd. and San Antonio Rd. between Leon and Madison Counties, Normangee Precinct. W. D. Lacy, co. judge. Engineer not selected.

Tex., Colorado — Mitchell Co. defeated $325,000 bonds improving various roads. F. F. Du Bose, co. engr. Noted May 1.

Tex., Dallas—S. G. Hines & Co., Magnolia Bldg., making plans paving, water extensions, sewers, etc., in Park Estates. $75,000. Koch & Fowler, Central Bank Bldg., engrs.

Tex., Fairfield — Freestone Co. making plans grading and rein.-con. paving 6.85 mi. State Highway 7, 18 ft. $250,800. J. E. Johnson, co. engr.

Tex., Groveton — Trinity Co. election July 12, $60,000 bonds for roads in Rd. Dist. 1. P. J. Berry, co. judge.

Tex., Houston — Voted 200,000 bonds graveling and $500,000 bonds permanent paving various streets. J. C. McVea, city engr.

Tex., Houston—Making plans permanent paving various streets. City to pay for intersections only with recent bond issue of $500,000. Total $2,500,000. J. C. McVea, city engr.

Tex., Karnes City—Karnes Co. election June 28, $125,000 bonds 9 mi. road in Rd. Dist. 5. O. N. Powell, Kenedy, co. engr.

Tex., Lufkin—Angelina Co., soon takes bids grading and gravel surfacing, etc., 15.64 mi. State Highway 63, 16 ft. $190,000. G. R. Abney, co. engr. Noted Apr. 24.

Tex., Marshall—See "Unclassified."

Tex., Refugio—Refugio Co. voted $375,000 bonds roads in Austwell Rd. Dist. J. F. Vance, co. judge.

Tex., Vernon — Wilbarger Co. making plans grading, rein.-con. paving, etc., 5.25 mi. State Highway 5, 18 ft. $190,800. J. B. Nabors, co. engr.

Idaho — Bureau of Highways, Boise, **(F. A. P. means Federal Aid Project)**, rejected bids paving, surfacing, etc., F. A. P. 73-A, Sta. 13-280, and F. A. P. 64-B and 73-A between Sta. 280 and Wallace, both from Kellogg to Wallace, also F. A. P. 73-B between Stations 239 and 311 plus 49, from Wallace to Mullan, all Coeur d'Alene-Yellowstone Trail, Shoshone Co. Noted May 8.

Wash., Seattle—Comrs. King Co., take bids about July 14, paving 4 mi. Renton-Maple Valley Rd., from Renton East. $125,000. T. R. Beeman, Seattle, engr.

Calif., Alhambra — Defeated $240,000 bonds paving Valley Blvd. and Main St. T. B. Downer, city engr. Noted June 5.

Calif., Compton — Plans paving and sewers portions of Chester, Bway., Pearl Sts., etc. To exceed $25,000.

Calif., Los Angeles — Made plans and soon takes bids, improving Sate Ave. between Ventura Blvd. and San Luis Ave., 47,250 cu.yd. cut, 8,670 cu.yd. fill, 23,145 ft. light curb, 3,932 ft. heavy curb, 69,859 sq.ft. walks, storm drain and ornamental lighting system. J. A. Griffin, city engr.

Calif., San Diego—Made plans improving El Cajon Ave., 245,828 sq.ft. 2 in. asphaltic concrete on 3 in. bituminous, 285,085 sq.ft. 1½ in. asphaltic concrete on 4 in. concrete, 33,243 sq.ft. concrete sidewalk, etc. F. A. Rhodes, city engr.

Calif., Seal Beach—Plans paving Ocean Ave. To exceed $25,000.

Calif., Sonora—Tuolumne Co. rejected bids improving roads from Tuolumne to Sonora and from Columbia to Sonora, etc. Will revise plans and take bids on new types paving. Noted June 19.

Que., Valleyfield — Plans 25,000 sq.yd. tarvia or asphalt pavement. $50,000. A. Sullivan, town engr.

Ont., Agincourt—Toronto & York Rds. Comn., 57 Adelaide St., E., Toronto, plans 15,000 sq.yd. bituminous macadam pavement here. $30,000. E. A. James, 57 Adelaide St. E., Toronto, engr.

Ont., Belleville—Plans 6,500 sq.yd. asphalt and concrete pavements on various streets. $30,000. C. D. Campbell, city engr.

Ont., Cornwall—Stormont, Leeds & Glengarry Counties, plan to expend $400,000 new macadam roads, pavements and bridges. J. G. Cameron, County Bldg., engr.

Ont., Ft. William—Soon takes bids improving 2 mi. roads, gravel $18,000, and bituminous macadam $30,000. C. B. Symes, city engr.

Ont., Galt — Making plans 8,000 sq.yd. asphalt or concrete pavements on various streets. $40,000. D. T. Black, city engr.

Ont., Hamilton—Making plans concrete curbing, guttering and paving 100,000 sq. yd. various streets, asphalt and concrete. $435,000. W. L. McFaul, city engr.

Ont., Hamilton—Plans 32,000 sq.yd. asphalt paving on Park Row, Gibson and Roxboro Aves., Agnes, Queen, Cannon, Edgevale, Whitfield, Paisley, Justine, Edgar and Graham Sts. 150,000. W. L. McFaul, city engr.

Ont., Kingston — Making plans laying concrete sidewalks and paving 25,000 sq. yd. various streets, asphalt and concrete. $110,000. H. S. Dick, city engr.

Ont., Kingston — Plans asphalt paving Earl St. $11,200, Barrie St. $16,400, William St. $3,200, Frontenac St. $44,700, Johnston St. $3,700, Ordnance St. $15,500, Sydenham St. $10,200. H. S Dick, city engr.

Ont., Merritton—Plans 20,000 sq.yd. concrete pavements. $80,000. Engineer not appointed.

Ont., Ottawa—Making plans 25,000 lin.ft. concrete sidewalks. $90,000. A. F. Macallum, city engr.

Ont., Toronto—Soon takes bids widening and paving 1¼ mi. St. Clair Ave. from Bathurst to Dufferin Sts., 20,000 sq.yd. asphalt. $150,000. R. C. Harris, city engr.

Ont., Toronto — Plans asphalt paving Coxwell Ave. $38,655, Day Ave. $2,993, Sellers Ave. $3,646, Gunnas Rd. $17,113, Weston Rd. $21,707, lane west of Yonge St. $9,763, bituminous concrete paving Bayfield Crescent $12,668, concrete curbing Bayfield Crescent $648, Golfview Ave. $262, concrete sidewalks on Golfview Ave. $1,749, Bastedo Ave. $847, Duplex Ave. $1,446, Edith Dr. $3,689, Euston Ave. $1,446, Glenview Ave. $1,665, Leeds St. $1,100, Moberly Ave. $1,417, Ainslee St. $1,634, Fairview Ave. $760, Heather St. $3,379, Newmarket Ave. $1,749. R. C. Harris, city engr.

Ont. Wharton — Plans concrete paving Berford Rd. $40,000.

BIDS DESIRED

New Hampshire—June 27, by State Highway Dept., Concord, bituminous macadam paving, 0.92 mi. road in Center Harbor, 0.75 mi. in Moultonboro, 0.78 mi. in Bethlehem; 9 x 9 ft. rein.-con. box culvert in Rochester; 80 ft. span concrete bridge and 1,000 ft. rein.-con. approaches in Lebanon; 80 ft. steel bridge, rein.-con. substructure, and 0.27 mi. gravel approaches, in Ossipee. F. E. Everett, highway comr.

Massachusetts — July 1, by Dept. Pub. Wks., Div. Highways, State House, Boston, bituminous macadam, 11,200 ft. highway 18 to 20 ft. in Pembroke, to exceed $25,000; 23,617 ft. highway in Provincetown, 18 to 20 ft., to exceed $50,000. W. F. Williams, comr.

Mass., Boston—June 30, by Pub. Wks. Dept., City Hall, Boston, artificial stone sidewalks on various streets. $25,000. J. A. Rourke, comr.

Mass., Boston — July 2, by Pub. Wks. Dept., City Hall, Boston, concrete paving various streets. $50,000. J. A. Rourke, comr.

Mass., Brookline (Boston P. O.)—June 30, by Bd. Selectmen, Town Hall, asphalt paving 3,000 ft. Harvard St., 80 ft. E. A. McEttrick, secy.

Mass., Dedham—July 2, by Bd. Selectmen, Town Hall, constructing Hillside and Schiller Rds. $25,000. J. R. Burgess, chn.

Conn., Wallingford—July 8, by Court of Burgesses, curbing, guttering and paving various streets. W. A. MacKenzie, boro engr.; adv. E. N.-R. June 26.

N. Y., Cold Spring—July 12, by Village President and Trustees, improving streets and storm sewers. H. E. Breed, 507 5th Ave., New York City, engr.; adv. E. N.-R. June 26.

N. Y., Long Island City—June 30, by M. E. Connolly, pres. Queens Boro., Queens Subway Bldg., grading, etc., Court St.; paving Maurice Ave., Opdyke, Siboutsen and 86th Sts., 85th St. from Jamaica Ave. to Park Lane S., 85th St., from Jamaica to Atlantic Aves.; grading, curbing and laying sidewalks, etc., on Richard Ave., Opdyke and 123rd Sts.

N. Y., New York—June 30, by J. Miller, pres. Manhattan Boro., Municipal Bldg., granite block paving 18th St.; wideing and repaving Madison Ave.; curbing, recurbing, flagging, reflagging and paving West 176th St.; curbing and flagging West 187th St.

N. Y., St. George — July 3, by J. A. Lynch, pres. Richmond Boro., Boro Hall, repaving with granite block Jersey St.; concrete curb, etc., on Elizabeth St.

New Jersey—July 9, by Bd. Freeholders Atlantic Co. (Mays Landing), Guarantee Trust Bldg., Atlantic City, reconstructing Absecon Blvd. joining Absecon with Atlantic City. F. L. Willetts, clk.; adv. E. N.-R. June 26.

N. J., Mt. Holly—July 11, by Bd. Freeholders, Burlington Co., reconstructing 13,800 sq.yd. Coopertown Rd., and 54,348 sq. yd. Riverton-Moorestown Rd., Moorestown, Cinnaminson and Riverton Boro. Twps. H. B. Smith, co. engr.; adv. E. N.-R. June 26.

N. J., National Park—July 15, by Bd. Freeholders Gloucester Co., Woodbury, concrete paving Natl. Park Blvd., West Deptford Twp., here. W. C. Cattell, Merritt Bldg., Woodbury, co. engr.; adv. E. N.-R. June 26.

N. J., New Brunswick—July 10, by Bd. Freeholders Middlesex Co., rein.-con. paving, etc., Old Bridge-Matawan Rd., Madison Twp. M. F. Larson, 175 Smith St., Perth Amboy, co. engr.; adv. E. N.-R. June 26.

Pennsylvania—July 15, by State Dept. Hys., Harrisburg, constructing 37 mi. of 15 projects in 12 counties, bituminous surface on concrete or rein.-con. P. D. Wright, secy. highways; adv. E. N.-R. June 26.

Pa., East Conemaugh (Johnstown P. O.) —June 30, by Boro Council, F. W. Campbell, secy., reconstructing with rein.-con., 577 sq.yd. brick paving, 24 ft. wide, 290 sq.yd. concrete sidewalk, 8 ft. wide, 585 sq.yd. rein.-con. floor system, etc. $30,000. O. P. Thomas, Park Bldg., Johnstown, engr.

Pa., Spangler—July 9, by Boro Council of Spangled and Barnesboro, jointly, paving and grading 1,000 lin.ft. Marth and North 17th Sts., 16 ft. single course rein.-con., and 3 in. vitr. brick on concrete, also 4 ft. gutter on each side, etc. C. E. Schlicher, Spangler, and J. A. Scollon, Barnesboro, engrs.

Pa., Williamsport—June 30, by C. L. Jones, supt. highways, grading, curbing and paving 37,600 sq.yd. Washington, West 4th and Maynard Sts., brick, sheet asphalt or other type of paving. L. Mussina, city engr.

Pa., Williamsport — July 1, by C. L. Jones, supt. highways, curbing 34,492 ft. Memorial Ave., High, Chestnut, Almond and Walnut Sts. L. Mussina, city engr.

Maryland—July 9, by State Rds. Comn., Baltimore, concrete paving in Montgomery, Prince George's, Howard, Baltimore, Queen Anne's and Cecil Counties, Contrs. M-52, P-53, Ho-48, Ho-25, B-12-C, Q-30 and Co-32; graveling in Calvert Co., Contr. C-17; concrete shoulders in Montgomery Co., Contr. 169-S. J. N. Mackall, chn.; adv. E. N.-R. June 26.

W. Va., Fairmont—July 16, by L. N. Satterfield, clk. Marion Co. **(P means Project, S means Section)**, improving roads in Paw Paw Dist.: 1.18 mi. Rivesville-Parkers Run Rd., P-1, S-1, 2 mi. Rivesville-Baxter Rd., P-2, S-1, 2.5 mi. Baxter-Hoodsville Rd., P-3, S-2, 2.5 mi. Hoodsville-Shumans Run Rd., P-2, S-3, 2.5 mi. Baxter-Grants Town Rd., P-3, S-1, 1 mi. Wheeling-Fairmont Turnpike-Robinson Rd., P-4, S-1, 1.13 mi. Fairview-Bennefield Rd., P-5, S-1, 1.13 mi. Fairmont-Wheeling Turnpike, P-6, S-1; grading and paving roads in Lincoln Dist.: 1.7 mi. Jimtown Rd. and 1 mi. Fairview Pike, P-1-A and B, 2.5 Plum Run Rd. and 7 mi. East Run Rd., P-2, and 3, 1 mi. Helens Run Rd. and 1 mi. Caroline Rd., P-4-A and 5, 1.5 mi. Teverbaugh Rd., P-6, 1.8 mi. Bingamon Rd. P-7, 0.24 mi. Thoburn Rd. and 0.51 mi. Everson Rd., P-8 and 9. F. J. Wilfong, Court House, dist. road engr.

W. Va., Grantsville—July 8, by S. T. Waldo, clk. Calhoun Co., grading approximately 4 mi. Grantsville-Sheridan Rd., Project 3249, Route 35. Noted Jan. 31.

W. Va., Moundsville—July 11, by Marshall Co. grading and concrete paving 3.8 mi. Federal Aid Project 138-A, 18 ft., $100,000; 1 mi. Federal Aid Project 138-B, 18 ft., $35,000. H. E. Snyder, Parkersburg, engr.

W. Va., Williamson—July 8, by Mingo Co., improving 9 mi. Beech Creek Rd., Project 30, 47,620 lin.ft. clearing, 60,000

Streets and Roads (Continued)

cu.yd. excav., 15,000 cu.yd. borrow, 250 cu. yd. cement rubble masonry, 8,000 lb. reinforcing, 3,050 lin.ft. 15- to 24-in. rein.-con. pipe, etc. J. R. Hunt, co. engr.

Georgia—July 2, by State Hy. Dept., East Point, improving about 60 mi. roads in various counties. W. R. Neel, highway engr.

Fla., Jacksonville—July 9, by City Comn., paving Curry, 9th, Pine, Victoria, William and Laura Sts., $28,000; Cherry Ave. and Edgewood St., $26,000. W. E. Sheddan, Engineers Bldg., engr.

Fla., Key West—July 7, by J. O. Kirchheimer, chn., Bd. Comrs. Monroe Co., stone surfacing, and oiling 4.48 mi. highway on Key Largo from Barnes Point to Mainland, $37,000; Stock Island to Saddle Bunches, $75,000, both 16 ft. wide. Probably B. C. Moremo, Key West, engr.

Fla., Lakeland—July 8, by city, concrete sidewalks, etc. C. C. Brown, city engr.; adv. E. N.-R. June 26.

Alabama—July 10, by State Hy. Comn., Montgomery, graveling 29 mi. Roy Bridge-Marbury Rd., 20 ft., Montgomery and Autauga Counties. $50,000. W. S. Keller, highway engr. Noted Apr. 24.

Miss., Laurel—June 30, by City Comn., 22,000 sq.yd. paving, 6,700 sq.yd. sidewalks, 12,000 lin.ft. curb and gutter, 2,500 ft. concrete heading. $90,000. F. B. Cass, Laurel, engr.

Tenn., Jackson—July 8, by C. E. Griffin, comr. Pub. Utilities, improving city streets. E. R. Dike, city engr. Adv. E. N.-R. June 26.

Kentucky—July 15, by State Hy. Dept., Frankfort, **(F. A. P. means Federal Aid Project, S. P. means State Project)**, grading 10.115 mi. Scottsville-Glasgow Rd., 26 and 30 ft., F. A. P. 112, Allen Co., 10.767 mi. Covington-Lexington Rd., 26 and 30 ft., F. A. P. 114, Grant Co., 5.289 mi. Paintsville-Prestonsburg Rd., 24 and 28 ft., S. P. 50-B, Johnson Co., 9.498 mi. Richmond-Mt. Vernon Rd., 26 and 30 ft., F. A. P. 88, Madison and Rockcastle Counties; bank gravel or macadam surfacing 7.765 mi. Dixie Bee Line Rd., 18 ft., F. A. P. 111, Christian Co., 17.082 mi. Overton-Georgetown Rd., 14 ft., S. P. 49-A, Owen Co., 15.13 mi. Overton-Georgetown Rd., 14 and 32 ft., S. P. 49-A, Scott Co., 10.582 mi. Hodgenville-Bardstown Rd., 18 ft., S. P. 3-B, Larue Co.; bank gravel or concrete surfacing 9.27 mi. Louisville-Paducah Rd., 16 ft., S. P. 8-C, Union Co., 20.51 mi. Louisville-Paducah Rd., 16 ft., S. P. 8-D, Hancock Co.; bituminous concrete or rein.-con. surfacing 10.21 mi. Grayson-Ashland Rd., 16 ft., S. P. 47-C, Carter Co.; waterbound macadam surfacing 1.12 mi. Grayson-Ashland Rd., 16 ft., S. P. 47-R, Carter Co.; concrete or bituminous concrete surfacing 3.747 mi. Louisville-Bardstown Rd., 20 ft., F. A. P. 50-B, Jefferson Co.; concrete, rock asphalt or bituminous concrete surfacing 4.19 mi. Covington-Falmouth Rd., 18 ft., S. P. 62-E, Kenton Co.; concrete or waterbound macadam surfacing 5.54 mi. Loudon-Mt. Vernon Rd., 18 ft., F. A. P. 29-E, Laurel Co.; concrete or asphalt surfacing 17.035 mi. Barboursville-Corbin Rd., 18 ft., F. A. P. 61-C, Knox Co. J. S. Boggs, highway engr.

Ky., Poor Fork — July 7, improving Main, Cumberland, Huff and Market Sts., 14,070 sq.yd. rock asphalt surfacing on concrete, 7,900 lin.ft. concrete curbing, 3,700 cu.yd. excav., also 1,700 lin.ft. sewers. C. Wallace, Empire Bldg., Knoxville, Tenn., engr.

Ind., Muncie—June 30, by J. P. Dragoo, aud. Delaware Co., concrete paving 5,795 ft. Thomas Booker Rd. $49,000.

Michigan—June 30, by State Hy. Dept. at office Comrs. Dickinson Co., Iron Mountain, grading and surfacing 0.245 mi. State Trunk Line Rd. 75-2, 4,643 cu.yd. excav., 2,879 sq.yd. concrete; also 0.994 mi. State Trunk Line Rd. 75-3, 3,761 cu.yd. excav., 11,633 sq.yd. concrete. G. C. Dillman, Lansing, state engr.

Michigan—June 30, by State Hy. Dept. at office Comrs. Sanilac Co., Sandusky, shaping and surfacing 5.754 mi. State Trunk Line Rd. 27-12, Sect. C, 54,456 sq.yd. gravel; 4.924 mi. State Trunk Line Rd. 27-12, Sect. A, 46,620 sq.yd. gravel; 0.407 mi. State Trunk Line Rd. 27-12, Sect. B, 5,003 sq.yd. concrete, etc. G. C. Dillman, Lansing, ch. engr.

Michigan—June 30, by State Hy. Dept. at office Comrs. Iosco Co., Tawas City, grading and surfacing 0.979 mi. State Trunk Line Rd. 10-21, Sect. D1, 4,916 cu.yd. excav., 10,333 sq.yd. concrete; 0.945 mi. State Trunk Line Rd. 10-21, Sect. D2, 9,884 sq.yd. concrete; 0.646 mi. State Trunk Line Rd. 10-21, Sect. C, 2,864 cu.yd. excav., 7,578 sq.yd. concrete, etc. G. C. Dillman, Lansing, ch. engr.

Michigan—July 1, by State Hy. Dept. at office Comrs. Osceola Co., Hersey, grading and surfacing 0.473 mi. State Trunk Line Rd. 20-19, Sect. B, 2,475 cu.yd. excav., 6,227 sq.yd. concrete. G. C. Dillman, Lansing, ch. engr.

Ill., Mason City—June 30, 10,700 sq.yd. rein.-con. paving and 5,000 ft. straight curb in Dist. C, also 8,000 sq.yd. rein.-con. paving, 4,625 ft. straight curb in Dist. E. C. H. Kreiling, Havana, engr.

Ill., Villa Park—June 30, by Bd. Local Impvts., Meehan's Hall, Village Ave., approximately 16,000 lin.ft. concrete sidewalks. Suhr & Berryman, 105 North Clark Sts., Chicago, engrs.

Ill., Pekin—July 1, at office City Clerk, concrete paving Court St. R. L. Russell, corp. counsel; adv. E. N.-R. June 26t

Minn., Anoka—July 15, by A. A. Caswell, aud. Anoka Co., improving Job 2301, State Rd. 7: 2.4 mi., 17,322 cu.yd. excav., 83,180 cu.yd. overhaul, 164 ft. 12 to 24 in. corrugated metal culverts; Job 2407, State Rd. 3: 6.55 mi., 55,766 cu.yd. excav., 16,960 cu.yd. hand ditch, 506,470 cu.yd. overhaul, etc. $31,000. H. B. Childe, Anoka, engr.

Kan., Winfield—July 16, by Clerk Cowley Co. grading and surfacing 2.676 mi. Federal Aid Project 231-A, 28,211 sq.yd. brick or concrete, 9,963 cu.yd. excav., 8,406 lb. reinforcing, etc. W. S. Ruggles, co. engr. Noted May 22.

Montana—June 27, by State Hy. Comn., Helena, grading, etc., 4 mi. Federal Aid Project 202, Sanders Co., 24,230 cu.yd. earth, 11,983 cu.yd. intermediate and 11,062 cu.yd. rock excav., 18,081 sta.yd. overhaul, 6,111 cu.yd. crushed gravel surfacing, etc., $26,000; 10.68 mi. Federal Aid Project 208-A, Glacier Co., 58,705 cu.yd. common, 16,999 cu.yd. intermediate and 2,124 cu.yd. rock excav., 2,481 sta.yd. overhaul, 15,958 cu.yd. crushed gravel surfacing, 90 ft. pony truss bridge on concrete abutments, $45,000. Noted Apr. 24.

Mo., St. Louis — July 15, by Bd. Pub. Serv., 208 City Hall, reconstructing with asphaltic concrete and mineral matter surface on concrete, concrete gutters and granite curbs, 27,290 sq.yd. Madison St., $78,000, 7,680 sq.yd. Dodier St. $40,920, 4,210 sq.yd. Cora St. $20,000, 2,100 sq.yd. Nashville St. $10,200; Warrenite or asphaltic concrete and mineral matter surface, concrete parkway curbing 3,800 sq.yd. Forest Park, $70,200. W. W. Horner, 300 City Hall, engr.

Mo., St. Louis — July 22, by Bd. Pub. Serv., 208 City Hall, 13 concrete alleys in various parts of city, $39,920; widening and concrete curbing Watson Rd. from Penrod to Southwest Aves., $30,800. W. W. Horner, city engr.

Ark., Hot Springs—June 30, by Commissioners Paving Dist. 74, at office of C. Smith, city engr., City Hall, 3,983 cu.yd. grading 2,160 ft. 12- to 24-in. tile, 10,297 lin. ft. concrete curbing, 9,744 lin. ft. concrete gutters, 14,215 lin. ft. expansion joints, 16,397 sq.yd. 6 in. concrete paving, 11 corner intakes, 13 side intakes, 3 concrete one 3 x 9 x 60, one 3 x 7 x 60 and one 3 x 4 x 60 concrete arches.

Ark., Pine Bluff—July 2, 29,000 sq.yd. vibrolithic paving, 13,000 cu.yd. excav., 18,000 ft. combined curb and gutter. D. T. Purnell, 1,709 West 6th St., Pine Bluff, city chn.

Tex., Georgetown — July 14, by F. D. Love, judge Williamson Co., surfacing with road base and 1 in. bituminous topping 14.7 mi. State Highway 2, Federal Aid Project 140-C, 18 ft. $128,000. M. C. Wilborn, Georgetown, engr.

Tex., Roscoe—July 7, paving 10,800 sq. yd. various streets, standard alternates. $300,000. Montgomery & Ward, City Natl. Bank, Wichita Falls, engrs.

Tex., Rock Springs — July 9, by A. P. Allison, judge Edwards Co., grading and surfacing with crushed and sledged stone, etc., 9.77 mi. State Highway 41, 16 ft. $125,772. W. E. Simpson Co., Natl. Bank of Commerce Bldg., San Antonio, engrs.

Colo., Denver—July 1, by Dept. Impvts. & Parks, curbing, grading and surfacing ¾ mi. roads in North Denver Impvt. Dist. 34. $121,600. A. K. Vickery, city engr.

Wash., Auburn—July 1, by City Clerk, paving in business and residential sections, 17,000 sq.yd. 6 and 8 in. concrete. J. A. Fallgreen, Auburn, engr.

Wash., Port Angeles—July 7, by Comrs. Clallam Co., grading and graveling 4.5 mi. Count Rd. 2. F. Sullivan, Port Angeles, engr.

Calif., Marysville—Taking bids grading and paving about 13 blocks, portions of I, 7th, 8th Sts., etc., 1½ in. warrenite-bitulithic on 3½ in. asphaltic concrete, curbs, gutters, etc. W. M. Meek, city engr.

Calif., Hayward—Town Trustees taking bids, improving Sunset Blvd. and Sotoo St., etc., 118,270 sq.ft. 1½ in. on 3½ in. asphaltic concrete, curbs and concrete gutter, etc. To exceed $25,000. J. B. Holly, town engr. Noted June 5.

Calif., San Rafael — July 7, concrete paving 22,700 sq.ft. Irwin St. E. W. Smith, city clk.

BIDS RECEIVED

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, reconcreting asphalt pavement in various streets, from Edwards & Flood, Inc., 25 Court St., $26,500. Noted June 12.

N. Y., Long Island City—M. E. Connolly, pres. Queens Boro., Queens Subway Bldg., from A. A. Johnson Corp., Queens Blvd., sheet asphalt paving Van Alst Ave. $61,044, grading, curbing and laying sidewalks on Woodside Ave., $239,921, 6th Ave. $28,629; regrading, curbing, recurbing, flagging, reflagging and paving 4th Ave. $14,841; from Green Contg. Co., 734 Vernon Ave., Astoria, grading, curbing and laying sidewalks on Van Alst Ave. $25,164; from W. P. McDonald Constr. Co., 17 West 42nd St., New York, sheet asphalt paving 85th Rd., $4,471; from J. J. O'Brien, Jr., William St., Jamaica, grading sidewalk and gutter spaces on 147th Pl. $2,803; 87th St. $7,613; from Cleveland Trinidad Paving Co., Flushing, paving 87th St. $14,833. Noted June 12.

N. Y., Utica—Bd. Contr. & Supply, from H. W. Roberts & Co., 622 South St., (1) rein.-con. (2) Warrenite paving Springate St. (1) $5,104 (2) $5,662, Sherman Pl. (1) $6,223 (2) $6,873, Lamb St. (1) $7,281 (2) $8,115 Hager St. (1) $4,485, (2) $4,976, Ballantyne Brae (1) $15,648 (2) $18,208, Leslie Ave. (1) $14,058 (2) $15,709.

New Jersey—State Hy. Comn., Trenton, constructing Route 9, Sect. 15, Union Co., 54,216 sq.yd. rein.-con., from Newark Paving Co., 133 1st Ave., Newark, $284,208; Route 3, Sect. 11, Camden Co., 60,824 sq.yd. 8 in. gravel, from C. T. Kavanaugh, Prospect Ave., Bayonne, $77,108; Route 2, Sect. 6, Burlington Co., 47,500 sq.yd. sheet asphalt, from Union Paving Co., 30th and Locust Sts., Phila., Pa., $63,360. Noted June 5.

N. J., Camden—C. F. Wise, chn. Roads Comn., Court House, paving Park Ave., Pensauken Twp., from Fish-Rutherford Inc., Real Estate Trust Bldg., Phila., Pa., $70,740.

Pennsylvania—State Dept. Hys., Harrisburg, **(R. means Route and A. Application)** constructing R. 376, Lebanon Co., from Swanger & White, 2nd and Canal Sts., Lebanon, $155,753; R. 204, Beaver Co., from S. B. Markley, New Brighton, $41,486; R. 15 and 343, A. 2335 and 2340, Bradford Co., from Lane Constr. Corp., 35 Colony St., Meriden, Conn., $222,151; R. 117, Fayette Co., from G. McIntyre, Fairchance, $85,852; A. 1788, Warren Co., from E. M. Love & Son, Cory, $47,976; R. 288, A. 568, Allegheny Co., from Frazier Manfield, McKeesport, $34,810; R. 150, Bucks Co., from Sutton & Corson Co., 9th St. and Simpson Ave., Ocean City, N. J., $331,104; R. 170, Luzerne Co., from D. A. Grant Co., Inc., 413 Veach Bldg., Oil City, $55,750; A. 2577, Clarion Co., to Standard Paving & Constr. Co., 210 East Ohio St., Chicago, $98,330; A. 1824, Westmoreland Co., from State Constr. Co., New Kensington, $42,756; R. 118, A. 2843, Washington Co., from Charleroi Constr. Co., Box 168, Charleroi, $29,591; A. 1616, Somerset Co., from D. E. Keller & Son, Somerset, $54,753; R. 169, Monroe Co., from McInerney & McNeal, Inc., 703 Northampton Natl. Bank, Easton, $26,040; R. 102, Tioga Co., from D. Schoentag, Inc., 68 Ulster Ave., Saugerties, N. Y., $405,614; R. 118, Washington Co., from H. P. Streicher Co., Inc., 319 Terminal Bldg., Toledo, O., $167,997; R. 247, Fayette Co., from Georges Constr. Co., Uniontown, $81,200; R. 162, Schuylkill and Carbon Counties, from E. A. Corson, 739 Asbury Ave., Ocean City, N. J., $177,219; A. 2734, Monroe Co., from Juniata Co., 410 Empire Bldg., Phila., $134,256; R. 97, Elk Co., from F. D. Ross, 74 High St., Bradford, $440,479; R. 183, A. 2118, Columbia Co., from J. Christiano, 301 South Shamokin St., Shamokin, $128,744; R. 184, A. 1219, Luzerne Co., from Freeland Constr. Co., 501 Amer. Bank & Trust Bldg., Hazelton, $64,913; R. 59, Jefferson and Clearfield Counties, from H. W. Horst Co., Rock Island, Ill., $424,068; R. 88, Warren Co., from J. C. Devine Co., Alliance, O., $401,243; R. 381, Forest Co., from T. W. Munro & Co., Du Bois, $41,647; A. 31, Tioga Co., from R. D. Richardson Constr. Co., 828 Connell Bldg., Scranton, $187,140; R. 185, Schuylkill Co., from W. H. Murphy & Sons, 2100 State St., Harrisburg, $405,904; R. 215, Chester Co., R. 158, Montgomery Co. and R. 158, Berks and Lehigh Counties, from Lincoln Constr. Co., Strafford, $44,672, $16,714 and $37,779 respectively; R. 355 and R. 291, A. 2207, both Lycoming Co., from Continental Contg. Co., Knickerbocker Bldg., Baltimore, Md., $55,385 and $66,777 respectively; bridge over Rock Creek, R. 42, Adams Co., from J. S. McIlvaine & Co., Chambersburg, $12,566. Noted June 5.

W. Va., Williamson—Mingo Co., grading,

Streets and Roads (Continued)

etc., Naugatuck-Duncan Fork Rd., Project 18-A, B and C, from I. Webb, Williamson, $59,909; Burch-Trace Rd., Project 27, from Waugh & Longley, Williamson, $58,546. Noted June 6.

Fla., Hillcrest Heights (Babson Park P. O.)—Improving 2 mi. Pomella, Palm, Catherine and Oak Sts., 24 ft., from W. P. Kennedy Constr. Co., Avon Park, excav. $0.46, 5 in. limestone rock base $0.72, 2 in. asphalt $1.20, total $33,944. Noted June 12.

Alabama—State Hy. Dept., Montgomery, improving 6.035 mi. Thomasville-Maringo Co. line Rd., S-21, Clark Co., from J. P. McKee, Leroy, $73,329; grading, etc., 9.187 mi. Eutaw-Gainsville Rd., S-4-B, Greene Co., from Lamb & McLemore, Eutaw, $55,805; surfacing 9.187 Eutaw-Gainsville Rd., S-4-B, Greene Co., from W. C. McCoy, Lafayette, $55,000. Noted May 22.

La., Shreveport — Permanent paving Fetzer Ave., from E. J. Deas Co., Shreveport, $114,021.

Tennessee — State Dept. Hys. & Pub. Wks., Nashville, **(F. A. P. means Federal Aid Project, S. P. means State Project)**, grading, etc., 7.37 mi. Brighton-Covington Rd., F. A. P. 31-B, Tipton Co., from Little & Dean Constr. Co., Memphis, $43,989, 4.6 mi. Hornbeak Rd. to F. A. P. 71-B, S. P. 169-B, and 8.026 mi. Troy-Hornbeak Rd., incl. bridge over 20 ft. span concrete bridge, S. P. 169-A, Obion Co., from Ellis & Smithers Co., Owensboro, Ky., $35,067 and $74,349 respectively, 7.78 mi. Jackson-Gibson Co. line Rd., F. A. P. 29-B, and 3.66 mi. Gibson Co. line Rd., to F. A. P. 29, S. P. 168, Madison Co., from F. D. Harvey & Co., Memphis, $46,047 and $58,562 respectively, 5.02 mi. Tarlton-Warren Co. line Rd., incl. two timber bridges, over 20 ft. span, S. P. 171, Grundy Co., and grading and waterbound macadam surfacing 4.625 mi. Little Creek Rd. to S. P. 136, incl. 4 bridges, Marion Co., from Brown Bros. Constr. Co., Tracy City, $65,737 and $136,924 respectively, 2.25 mi. Humbolt-Jackson Co. line Rd., incl. two bridges over 20 ft. span, F. A. P. 29-A, Gibson Co., from Cresap Constr. Co., $34,877, 9.86 mi. Brighton-Shelby Co. line Rd., incl. one concrete bridge, over 20 ft. span, F. A. P. 31-A, Tipton Co., from J. A. Pardue & Co., Pine Bluff, Ark., $106,053, 9.413 mi. Milan-Madison Co. line Rd., incl. one bridge over 20 ft. span, S. P. 167, Gibson Co., from S. R. Hall Constr. Co., Newbern, $58,950; grading and surfacing with limestone on giant macadam 9.143 mi. Rutherford Co. line to point 5 mi. of Manchester, S. P. 151-C, Coffee Co., from Pitts Bros. Constr. Co., Mt. Pleasant, $84,368. Noted June 5.

Ohio—Dept. Hys. and Pub. Wks., Columbus, grading, bridging and paving with (a) bituminous macadam, asphalt, (b) state to furnish stone, (c) bituminous macadam, tar (d) state not to furnish stone (e) bituminous macadam, lake (f) waterbound gravel (g) brick (h) tar macadam (i) rein.-con. (j) waterbound macadam incl. stone (k) waterbound macadam, state to furnish stone (l) concrete (m) state to furnish brick (n) Kentucky rock asphalt (o) asphalt (p) tar, (1) 1.887 mi. Sect. "H," Athens-Logan Rd., Athens Co. (2) 2.043 mi. Sect. "J," Athens-Logan Rd., Hocking Co. (3) 1.228 mi. Sect. "Amelia," Cincinnati-West Union Rd., Clermont Co. (4) 2.386 mi. Sect. "B-2-b" and "C," Portsmouth-Lucasville Western Rd., Scioto Co. (5) 3.274 mi. Sect. "F-2," Canton-Massillon Rd., Stark Co. (6) 6.346 mi. Sect. "A" Salem-Warren Rd., Trumbull Co. (7) 1.873 mi. Sect. "E," New Philadelphia-Uhrichsville Rd., Tuscarawas Co. (8) 4.285 mi. Sect. "A," Lancaster-Newark Rd., Fairfield Co. (9) 0.405 mi. Sect. "Nashville," Mansfield-Millersburg Rd., Holmes Co. (10) 2.77 mi. Sect. "A2," Ottawa Co. (11) 0.414 mi. Sect. "B" Zanesville-New Lexington Rd., Perry Co. (12) 0.279 mi. Sect. "I-2," Portsmouth-Columbus Rd., Scioto Co. (13) 3.409 mi. Sect. "C," Dayton-Lebanon Rd., Warren Co. (14) 0.471 mi. Sect. "Smithville," Akron-Wooster Rd., Wayne Co.; grading (15) 2.685 mi. Sect. "D" Morristown-New Athens Rd., Belmont Co. (16) 2.948 mi. Sect. "H" McArthur-Athens Rd., Vinton Co.; surface treating (17) 4.49 mi. Sect. "B," Bono-Port Clinton Rd., Ottawa Co.; bridge approaches (18) 0.083 mi. Sect. "O," Lima-Sandusky Rd., Seneca Co., from Straw & Huber, Eaton, (a1) $24,694 (g5) $167,430; Harrison Constr. Co., Columbus, (b1) $20,307; Carey & Abt, Ada, (c1) $25,889; T. Wolfe, Bloomville, (b2) $18,888 (d2) $26,253 (k8) $25,666; Neff & Rader, Circleville, (a2) $24,870 (j8) $48,105; Miller & Co., Martinsville, (a3) $23,159 (c3) $23,159; J. Grover, Bethel, (e3) $24,338; Coharis & Gerkins, Toledo, (m3) $24,500 (g12) $27,860; W. C. Brown, Chillicothe, (f4) $28,661; L. Jones, Kansas, (e18) $12,937; Kolbarger & Langdon, Marion, (p18) $13,619; Laubis Stone Co., Kenton, (a6) $120,702; Mango & Gross, Niles, (h6) $122,411; Daley Bros., Bolivar, (j7) $43,694; Griggs-Anderson Co., Millersburg, (l9) $8,867; Weis Bros. & Burman, Elmore, (g10) $106,546 (l10) $91,866; Modern Constr. Co., Fremont, (m10) $77,900; E. H. Clifton & Son, McConnellsville, (b11) $9,300 (h11) $11,059; R. Stone Co., Lima, (a13) $78,399; Craig & Jordan, Blanchester, (h13) $80,558; Studebaker & Son, Greenville, (g14) $17,651; Jefferson Constr. Co., Bloomingdale, (15) $26,506; Gaty Constr. Co., Columbus, (16) $22,986; L. Dehmer, Tiffon, (17) $2,984. Noted June 5.

O., Columbus — Franklin Co., June 11, from A. W. Burns Co., 31f South High St., sheet asphalt paving 2,213 ft. Schreyer Pl. Rd., 24 ft., $24,937, 2,007 ft. Dominion Blvd. West Rd., 24 ft., $27,579, 579 ft. Rosemary Parkway Rd., 50 ft. with 18 ft. parkway in center $11,359, 750 ft. Zeller Rd., 50 ft. with 18 ft. parkway in center $15,677, 438 ft. Olentangy Blvd. Rd., 30 ft. $8,287, 1,934 ft. Aldrich Rd., 26 ft. $33,220. Noted June 5.

Michigan — State Hy. Dept. at office Comrs. Wasstenaw Co., Ann Arbor, grading 3.578 mi. Federal Aid Project 67 A1 and A2, 86,549 cu.yd. excav., etc., from D. Jeffrey, Clarkston, $43,394; grading and concrete surfacing 16,707 sq.yd. Federal Aid Project 67 A3, from J. C. O'Connor & Sons, Ft. Wayne, Ind., $36,638; shaping and surfacing 5.13 mi. Federal Aid Project 67 E1, $54,176 sq.yd. concrete, from H. A. Hoxie, Grand Rapids, $136,020. Noted May 29.

Mich., Detroit — From Detroit Asphalt Paving Co., 909 Free Press Bldg., paving with 3½ in. sheet asphalt on 8 in. concrete, Chopin Ave. $26,093, Gaylor Ave. $1,429, Lawton Ave. $14,881, Livernois Ave. Sect. 1 $43,268, Livernois Ave. Sect. 2 $90,192, Prairie Ave. Sect. 1 $16,245, Turner Ave. $51,461, Tuller Ave. $69,020, 3rd Ave. $15,414; from Cleveland Trinidad Paving Co., 402 Hammond Bldg., Florence Ave. $21,461, Parkside Ave. Sect. 2 $22,484, Stoepel Ave. Sect. 1 $31,675.

Wis., West Allis—Bd. Pub. Wks., June 9, **(a)** grading **(b)** one course concrete paving **(c)** vibrolithic concrete paving **(1)** 50th Ave. **(2)** 13 alleys, from Reisinger & Co., 464 Oakland Ave., Milwaukee, **(a1)** $0.85 per cu.yd. **(b1)** $2.39 **(c1)** $2.48; from Texas Constr. Co., 446 68th Ave., **(a2)** at $0.75 to $1 per cu.yd. **(b2)** $1.98 to $2.02. Noted June 5.

Michigan — State Hy. Dept. at office Comrs. Shiawassee Co., Corunna, grading and surfacing 1.524 mi. State Trunk Line Rd. 21-23, 7,231 cu.yd. excav., 17,910 sq.yd. concrete, from J. C. Stewart Co., Owosso, $44,935. Noted May 29.

Neb., Lincoln—Paving, curbing and guttering Dist. 538, from Able Constr. Co., 318 Terminal Bldg., asphaltic concrete $59,378; from Roberts Constr. Co., brick $79,759. Engrs. est. $60,000 asphaltic concrete.

Missouri — State Hy. Dept., Jefferson City, from C. F. Johnson & Sons, Buffalo, grading 3.892 mi. road from St. Louis to Springfield, $31,529, 3.811 mi. road from St. Louis to Springfield, $23,918, 4.793 mi. road from Marshfield north and west, $33,835, 4.944 mi. road from St. Louis to Kansas City, $40,400, all 34 ft. in Webster Co.; from M. Haase, Trenton, grading 1.301 mi. road from Kansas City to Park Villa, Clay Co., $21,792, 4.329 mi. road from Deepwater to Lowry City, Henry Co., 30 ft., $20,962, concrete paving 1.301 mi. road from Kansas City to Parkville, 18 ft., Clay Co., $16,152; from W. C. Johnson, Belleville, Ill., grading 4.552 mi. road from St. Louis to Festus, $7,278, 2.852 mi. St. Louis to Festus, $4,065, concrete paving 4.552 mi. road from St. Louis to Festus, $113,851, 4.79 mi. road from St. Louis to Jackson, $106,963, 2.852 mi. road from St. Louis to Festus, $60,235, all 18 ft., Jefferson Co.; from Haller & Davis, Boonville, grading 4.834 mi. road from Wright City east and west, $36,613, concrete paving 3.834 mi. road from Wright City east and west, 18 ft., $65,343, both Warren Co.; from Felix Kersting Co., Jefferson City, graveling 2.835 mi. road from Rolla south, Phelps Co., $24,762, 3.327 mi. road from Zebra east and west, Camden Co., $16,076, both 12 ft.; from Gaines Bros., Fairland, Okla., grading 4.523 mi. Kansas City-St. Louis Rd., $11,782, 4.083 mi. Kansas City-St. Louis Rd., $25,930, 3.712 mi. road from Warrenton west, $14,588, all 34 ft., Warren Co.; from L. O. Kimball, Clear Lake, Ia., graveling 4.838 mi. road from Eldon east, Miller Co., $15,412, 4.045 mi. Hollister-Forsyth Rd., Taney Co., $16,021, both 12 ft.; from C. P. O'Reilly & Co., Wainwright Bldg., St. Louis, 12 ft., $26,156, 2.889 mi. road from Silva North and South, 26 ft., $16,310, both Wayne Co.; from Doehle & Kolkmeyer, Jefferson City, grading 5 mi. road from Brazito south, $20,783, 1.753 mi. road from Brazito south, $9,121, both 30 ft., Cole Co.; from W. W. Banker Constr. Co., Memphis, Tenn., graveling 4.711 mi. Caruth-Hornersville Rd., $55,969, 2.273 mi. Caruth-Hornersville Rd., $33,592, both 16 ft., Dunklin Co.; from M. E. Gilliloz, Monett, graveling 2.481 mi. Monett-Springfield Rd., $22,279, 3.426 mi. Monett-Springfield Rd., $12,474, both 16 ft., Lawrence Co.; from W. F. Smith & Co., Horana, Ill., grading 4.79 mi. St. Louis-Jackson Rd., Jefferson Co., $5,850, from C. T. Johnson, Warrensburg, 4.648 mi. Vista-Collins Rd., 30 ft., St. Clair Co., $28,304; from Pittsburg Des Moines Steel Co., Tuttle and Southwest 10th Sts., Des Moines, Ia., 1.15 mi. road from Chillicothe south, Livingston Co., $28,526, from C. C. Rowell, Montgomery City, 1.138 mi. road from Highhill east, 30 ft., Montgomery Co., $4,402, from J. L. Moss, Webster Groves, 1.163 mi. road from Elvins to Bismarck, 26 ft., St. Francois Co., $11,612, from Summerfield-Jones, Billings, 1.943 mi. road from Ava North, 26 ft., Douglas Co., $8,204, from Winstead & Gunther, Silvan Springs, Ark., 3.349 mi. road from Anderson south, 26 ft., McDonald Co., $36,206, from J. T. Fox, Branson, 4.214 mi. road from Ozark east, 26 ft., Christian Co., $11,264; from Reynolds, Bloker & Crews, Carruthersville, graveling 2.098 mi. road from East Prairie east, Mississippi Co., $24,888, from Wilson Constr. Co., Warrensburg, 2.374 mi. road from Baring north and south, Knox Co., $17,843, from C. G. Oglesby, 1856 Union St., Memphis, Tenn., 3.51 mi. road from Arbyrd south, Dunklin Co., $42,050, from Easley Bros., Aurora, 3.227 mi. road from Bolivar west, Polk Co., $33,425. Noted June 5.

Ark., Hot Springs—Paving Dist. 72, 1.356 cu.yd. excav., 576 lin.ft. arch concrete, 400 ft. 12- to 24-in. tile, 1,589 ft. concrete gutter and reset curb, 2,466 ft. new curb and gutter, 8,140 sq.yd. concrete paving, etc., from E. B. Mooney, 348 Valley St., $27,454. Noted May 29.

Wash., Seattle—Pub. Wks., June 13, paving 5th Ave., et al., LID 3820, from R. G. Stevenson, 1327 North 34th St., 8,580 sq.yd. 8-in. concrete $2.05, 2,100 cu.yd. subgrade $0.60, clearing, $500, total, concrete $24,603, engrs. est. $27,983, brick $25,353, engrs. est. $28,463.

California—State Highway Comn., Sacramento, grading 5.3 mi. between Boca and Sorenson, Nevada Co., from Irey & Holden, Lodi, $245,162. Noted May 29.

Calif., Fairfield—Solano Co. improving highway near Rockville, gravel or broken stone and concrete shoulders, from Tibballs, Percival & Cress, 214 Forum Bldg., Sacramento, $42,406. Engrs. est. $44,512.

Calif., Chico—Improving Normal Ave., Chestnut St., etc., 581,040 sq.ft. grading, 575,200 sq.ft. 5 in. asphaltic concrete paving, curbs, gutters, walks, etc., from Clark & Henery Constr. Co., Chancery Bldg., San Francisco, approximately $127,491. Noted June 12.

Calif., Los Angeles—Improving Division St. between Wollam St. and San Fernando Rd., from Curtis Paving Co., 2440 East 26th St., grading $18,600, 18,375 sq.ft. 5 in. concrete $0.23, 138,897 sq.ft. warrenite $0.26, 8,267 ft. curb $0.70, 38,444 sq.ft. walks $0.22, 8,599 sq.ft. gutters $0.35, storm drain $3,965, sanitary sewer $20,000. Noted June 12.

CONTRACTS AWARDED

Rhode Island — State Bd. Pub. Rds., Providence, relocating and rein.-con. paving 3.54 mi. Hopkinton-Westerly Rd. in Hopkinton, Federal Aid Project 20, Div. A, Contr. 2402, to A. D. Bridges Sons, Hazardville, Conn., $164,521; rein.-con. paving 2.05 mi. Fall River-Tiverton Rd., in Tiverton, Federal Aid Project 21, Div. A, Contr. 2403, to T. J. Quinn, Ashton, $107,153. Noted June 5.

Massachusetts—Dept. Pub. Wks., Div. of Highways, State House, Boston, improving highway in Reading, North Reading and Andover, bitulithic macadam, to R. R. Newell Co., Uxbridge, $52,933. Noted June 19.

Mass., Brookline (Boston P. O.) — Bd. Selectmen, Town Hall, paving about 1 mi. Beacon St. from Coolidge Corner to St. Mary's St., to Warren Bros., Parkman Bldg., Boston, $33,414. Noted June 5.

Mass., East Boston (Boston P. O.)—Dept. Pub. Wks., Boston, granite block paving, Border St., here, to Boston Contg. Co., Inc., Everett St., $35,069. Noted June 19.

Mass., West Roxbury (Boston P. O.)—Dept. Pub. Wks., City Hall, Boston, bitulithic paving Grove St., here, to S. J. Tomassello, 11 Cushing Terrace, Dorchester, $57,859. Noted June 19.

Calif., Suisun—Improving various streets, 19,924 sq.ft. 2 in., 85,345 ft. 2½ in. 45,821 sq.ft. 3½ in. asphaltic concrete paving, curbs, sewers, etc., to J. A. Costello, Jr., 564 Market St., San Francisco, $26,100. Noted June 19.

Calif., Vacaville — Improving various streets, 313,000 sq.ft. 2½ to 4½ in. willite

Streets and Roads (Continued)

surfacing, to California Constr. Co., 58 2nd St., San Francisco, approximately $75,000. Noted June 19.

Que., St. Thimothee—Paving 4.1 mi. National Rd., oil macadam, to Kennedy Constr. Co., Ltd., 310 Shaughnessy Bldg., Montreal, $60,234. Engrs. est. $75,000.

N. Y., Brooklyn — E. Riegelmann, boro pres. Boro Hall, to F. Persicano, 350 Fulton St., grading, curbing and flagging East 13th St. $5,791, to Galco Contg. Co., 745 Dean St., 67th St. $6,595, to G. M. Mandatto, 129 29th St., East 16th St. $5,846, to T. B. Scott, 671 Halsey St., East 28th St. $3,037, 49th St. $3,950, 85th St. $5,192; to Cranford Co., 52 9th St., asphalt paving East 16th St. $8,860, East 18th St. $2,835, East 28th St. $9,111, 49th St. $8,350, 87th St. $7,413, Foster Ave. $6,559, Grace Court $6,559, 12th Ave. $19,873, 82nd St. $5,462, 67th St. $30,755. Noted June 12.

N. Y., Kenmore—Paving various streets, to Rossney Contg. Corp., 73 West Eagle St., Buffalo, about $160,000.

N. Y., Brooklyn—E. Riegelmann, boro. pres. Boro Hall, to Uvalde Asphalt Paving Co., 7 Bway., New York, repaving Bushwick Ave. $5,138, Osborn St., $13,669, Pitkin Ave. $15,193, paving and repaving Farragut Rd. $41,289, paving with Malta St. $8,040 all asphalt; to C. Bennett Contg. Co., 414 Rutland Rd., grading, curbing and flagging East 17th St. $8,382; to Galecor Contg. Co., 745 Dean St., grading, curbing and flagging East 15th St. $6,153, West 9th St. $2,598; to Cranford Co., 52 9th St., repaving 85th St., asphalt $9,141; to Hastings Paving Co., 25 Broad St., New York, repaving Troutman St., asphalt block, $10,489; to F. J. Gallagher, 490 Park Pl., paving and repaving Marginal St., granite block $79,494. Noted June 19.

N. Y., Long Island City — M. E. Connolly, pres. Queens Boro., Queens Subway Bldg., to C. Kurth, 9519 126th St., Richmond Hill, grading, curbing and laying sidewalks on Arcadia and Maurice Aves., $1,965 and $10,645 respectively; to Welsh Bros., 32 Queens St., Astoria, grading, etc., Hunt St. $8,145, and grading, curbing and laying sidewalks on Siboutsen and 1st Sts., $6,040 and $5,782 respectively; to Kennedy & Smith, 93 Amity St., Flushing, grading, curbing and laying sidewalks on Hunt and Opdyke Sts., $19,387 and $8,465 respectively; to W. P. McDonald, 17 West 42nd St., New York, grading, curbing, flagging and asphalt paving, etc., Court St. $1,045, grading, curbing and laying sidewalks on 123rd St., $31,415; to Sicilian Asphalt Paving Co., 41 Park Row, New York, grading, regrading, curbing, recurbing and laying sidewalks on Gasman Ave., $147,825, grading, curbing, laying sidewalks and paving Richard Ave. $11,895, to F. Soviero, grading, curbing and laying sidewalks ,etc., on 2 sections 85th St. $10,885 and $10,775, 86th St. $10,028, 97th St. $13,573, 103rd Ave. $12,574. Noted June 12.

N. Y., New York—H. Bruckner, pres. Bronx Boro, 3rd and Tremont Aves., to Asphalt Constr. Co., 208 Bway., repaving with granite block on concrete Boscobel Ave., $135,746, asphalt paving East 175th St. $22,971, repaving with granite block roadway of East 163rd St. $18,402; to Burnside Contg. Co., 270 Burnside Ave., asphalt paving East 165th St. $87,175; to Regan Towers Inc., 124 West 121st St., repaving with granite block on concrete Boston Rd. $18,983, East 175th St. $92,015; to J. V. Timoney Constr. Co., 220 East 201st St., sewers in LaSalle Ave. $8,386. Noted June 19.

N. Y., New York—H. Bruckner, pres. Bronx Boro., 3rd and Tremont Sts., constructing Transverse Rd. carrying the center driveways of Grand Blvd. and Concourse under East Fordham Rd., to Bronx Sewer Constr. Co., 375 East Fordham Rd., $394,391. Noted June 12.

N. Y., New York—J. Miller, pres. Manhattan Boro., Municipal Bldg., to W. J. Fitzgerald, 547 West 45th St., widening and repaving with sheet asphalt Madison Ave., $52,114; to Asphalt Constr. Co., 208 Bway., curbing, recurbing and sheet asphalt paving Haven Ave. $37,165, repaving with granite block 44th St. $21,323; to D. J. McCarthy, 149 East 48th St., grading, curbing and flagging West 186th St., $5,615; to T. A. Reilly Co., 48 East 41st St., altering and improving sewer in Cedar St. $7,255; to W. M. Duffy, grading Chittenden Ave. $4,102. Noted June 19.

N. Y., New York—J. Miller, pres. Manhattan Boro., Municipal Bldg., repaving New Chambers St., to P. J. Kearns Contg. Co., 2306 Creston Ave., $45,065; Carmine St., to Casper Helbock, Inc., 633 Wales Ave., $41,318, both granite block on concrete. Noted June 12.

N. Y., Niagara Falls—For 10,964 sq.yd. 3 in. brick paving, asphalt filler on 6 in. concrete, etc., to J. F. McKinney, Gluck Bldg., $4.98 per sq.yd. E. B. Moss, city engr.

N. J., North Caldwell (mail Caldwell)—G. C. Bergen, purch. agt. Essex Co., Court House, Newark, grading and paving Grandview Ave., 8 in. rein.-con. here, to J. Heller, South Orange Ave., South Orange, $80,270. Engrs. est. $79,000.

N. J., Orange—G. C. Bergen, purch. agt. Essex Co., Court House, Newark, paving 2,000 sq.yd. Scotland St., 3 in. sheet asphalt on 6 in. concrete, to Standard Bitulithic Co., 50 Church St., New York City, $72,244. Engrs. est. $79,000. Noted May 29.

Pennsylvania—State Hy. Dept., Harrisburg, **(R. means Route and A. Application)** rein.-con. paving 27,780 sq.yd. R. 88, A. 1145 and 2679, to C. H. Fry Constr. Co., Erie, $197,645; 35,750 sq.yd. R. 258, A. 2908 and 2909, Erie Co., to J. C. Devine Co., Alliance, O., $167,045; 24,855 sq.yd. R. 59, Jefferson Co., to W. C. Quick & Co., Brookville, $120,790; 44,297 sq.yd. R. 178, Bucks Co., to E. Riley Mixner Co., Goshen, N. J., $177,658; 14,862 sq.yd. R. 4, Luzerne Co., to B. G. Coon Constr. Co., Luzerne, $96,763; 70,160 sq.yd. R. 223, Indiana Co., to Paul Constr. Co., Cresson, $357,018; 40,600 sq.yd. R. 95, McKean Co., to D. L. Dennis, Eldred, $192,268; 107,700 sq.yd. R. 189 and 338, Jefferson Co., to M. Bennett & Sons, Indiana, $550,254; bituminous surfacing 28,512 sq.yd. R. 140, Schuylkill Co., to Warren Bros. Constr. Co., Parkman Bldg., Boston, Mass., $146,060. Noted May 15.

Pa., Phila.—Bureau Hys., Dept. Pub. Wks. grading, to J. F. Nolan & Sons, 64 Church Lane, Champlost, Fairhill, Nedro, Spencer and 3rd Sts., $11,482, to Ferrante & Cellucci, 16th and Dickinon Sts., Sheldon St. $3,341, to E. A. Mullen, Inc., 5512 Vine St., Warrington St. $1,877, to Morrissey Bros., 4345 North 7th and 13th Sts. $1,648; asphalt paving, to Eastern Paving Co., 402 Colonial Trust Bldg., Diamond, Grange, Lippincott and Wheeler Sts., $24,807, asphalt repaving Ellsworth, Wharton, Gordon, Marshall and 23rd Sts., $46,864; redressed granite block repaving to J. Meehan & Son, 916 West Dakota St., Brown and Lehigh (track area) Sts., $22,410; repairing and resurfacing asphalt streets, to Barber Asphalt Co., 239 North 30th St., $156,475, to Union Paving Co., 306 Locust St., $300,065; repairing, surfacing and resurfacing country roads, to A. J. Henderson, 5807 Chew St., $23,056; improving League Island Park Bathing Pool, to E. Foy & Son, 2 South Mole St., $13,898.

Maryland—State Rds. Comn., Baltimore, macadam resurfacing 3.36 mi. road in Allegany Co., Contr. A-29, to S. T. Brotmarkle Maple St., Cumberland, $62,374, 1.94 mi., Harford Co., Contr. H-40, to T. P. Murray, Towson, $17,708; concrete paving 3.6 mi., Dorchester Co., Contr. D-38, to Slacum, Brohawn & Woolford, Cambridge, $85,451, 1 mi., Worcester Co., Contr. WO-34, to J. K. Flick, Sudlersville, $33,104, 1.17 mi., Caroline Co., Contr. CO-35, to Holt Constr. Co., Federalsburg, $29,515, 1.5 mi., Queen Anne's Co., Contr. Q-28, to C. Webster Constr. Co., East New Market, $35,-151, 1.3 mi., Kent Co., Contr. K-25, to Kaufman Constr. Co., Denton, $33,528, 2.14 mi., Cecil Co., Contr. CE-46, to Broad Creek Constr. Co., Elkton, $61,080; gravelling 1.88 mi., Anne Arundel Co., Contr. AA-41, to J. J. Stehle, Annapolis, $19,375; penetration macadam resurfacing and concrete shoulders, 4.6 mi., Baltimore Co., Contr. B-63, to F. D. Carrozza, Notre Dame Ave., Govans, $104,606. Noted June 12 and 19.

Md., Baltimore — Grading, curbing and paving with sheet asphalt streets listed in Contr. 258-NA, to P. Flanigan & Son, Harford Rd. and Baltimore & Ohio R.R., $29,665. Noted June 12.

West Virginia — State Road Comn., Charleston, to H. W. Taylor, Hagerstown, bituminous macadam paving 3.19 mi. Berkley Springs-Martinsburg Rd., Project 3030-A, Morgan Co., $104,165, to L. J. Chandler, Moorefield, 1.6 mi. Northwestern Turnpike, Project 122-A, Mineral Co., $43,-137, rock asphalt surfacing 0.8 mi. Main St. of Moorefield, Project 62-R, Hardy Co., $20,020; to Battershill Goode Co., Charlottesville, bituminous macadam paving 2 mi. Marlinton-Buckeye Rd., Project 131, Pocahontas Co., $69,094; to Elkins Constr. Co., Elkins, grading and bituminous macadam paving 1.5 mi. Philippi-Clarksburg Rd., Project 3276, Barbour Co., $52,795; to Stringer & Springer Constr. Co., Wheeling Bank and Trust Company Bldg., Wheeling, 0.15 mi. River road, Project 3032-A-1, Wetzel Co., $5,935, 0.5 mi. Ramp Hollow Creek Rd., Project 3140 Marshall Co., $18,-479, grading and bituminous macadam paving 3 mi. Sistersville-Middlebourne Rd., Project 3314, Tyler Co., $117,089; to Kelley Constr. Co., Clarksburg, grading 7.75 mi. Weston-Gilmer Co. line Rd., Project 3278-B, Lewis Co., $141,542, to Smith & Bender, Nitro, 1.6 mi. Country Club-Poco Rd., Project 3246, Putnam Co., $26,859, to Gilbert Constr. Co., Ansted, 6 mi. Blair-Hetzel Rd., Project 3200, Logan Co., $94,609, to Venable & Farkas, Charleston, 2.2 mi. Tyler Mountain Rd., Project 3134, Kanawha Co., $23,389, to Draper Bros., Bluefield, 5 mi. Wolfs Creek-Sinks Grove Rd., Project 137-B, Monroe Co., $107,193, to Walton, Suddeth-Waugh Co., Fayetteville, 0.9 mi. Hinton-Tug Creek Rd., Project 3313, Summers Co., $33,038, to Rogers & Shumway, Worthington, 2.2 mi. New Martinsville-Wileyville Rd., Project 3162-A, Wetzel Co., $43,468, to Cooper, Piper & Co., 7.2 mi. Arnoldsburg-Stumptown Rd., Projects 3166 and 3322, Calhoun and Gilmer Counties, $165,976, all 18 ft. wide. Noted May 22.

W. Va., Elkins — Randolph Co., paving Seneca Pike, to W. H. Rhodes, Elkins, $29,-576; Bennington Pike and I. O. O. F. Rd., to P. Williams, Elkins, $54,014. Noted May 22.

Ala., Anniston—Asphalt paving 6 blocks 8th St. and Woodstock Ave., to Morgan Hill Paving Co., Amer. Trust Bldg., Birmingham, $28,500. Engrs. est. 30,000. Noted Mar. 6.

Ala., Huntsville — Bituminous concrete paving Reynolds Ave., to Lashley Bros. Constr. Co., Chattanooga, approximately $29,050. Engrs. est. $25,000.

Fla., Frostproof — To W. P. Kennedy Constr. Co., Avon Park, **(e. e. means engrs. est.)** paving, Wall St. e. e. $25,771, B and 6th Sts., Palm and Orange Aves., e. e. $25,000, 3rd and Wall Sts., Lake Ave. and Lakeshore Blvd., e. e. $27,035, each 1¾ mi., 15 ft. wide, excav. $0.46, 5 in. rock base $0.72, 2 in. asphalt surface $1.20, curb and gutter $0.77.

La., Shreveport—Permanent Paving Centenary Blvd., to Southern Roads Co., Shreveport, $40,688.

O., Columbus—W. H. Duffy, dir. Pub. Serv., to L. S. Gaty, Sandusky and Mound Sts.; grading, paving and laying necessary water services and sewer connections in 362 ft. alley north 11th Ave., 22.5 ft., $2 366, 554 ft. alley north 7th Ave., 16 ft. $2,456, 350 ft. alley north 6th Ave., 16 ft. $1,700, all concrete; to Knight & Wells, 483 Oak St., 1,054 ft. Atcheson St., 30 ft. $19,041, 746 ft. Malvern Ave., 24 ft. $23,-684, both asphalt; to B. F. Patterson, 1214 Neil Ave., 1,029 ft. Ardmore Ave., 24 ft., asphalt $13,956; to W. Neilson, 169 East Lane Ave., 126 ft. 2nd alley west of High St., 16 ft., concrete $649; to I. O. Jones, 707 Grove St., 332 ft. 2nd alley west Kimball Pl., 14 ft., concrete $1,587. Noted June 5.

O., Shaker Heights (Cleveland P. O.)—Paving, etc., East 156th St., Milverton and Norwood Rds., 6,550 lin.ft. stone curbing, 5,508 cu.yd. earth excav., 11,175 sq.yd. asphaltic concrete, 97,575 sq.yd. concrete base, to Rieley Bros., The Arcade, Cleveland, $72,445. Noted June 19.

Mich., Detroit—To Detroit Asphalt Paving Co., 909 Free Press Bldg., paving with 3½ in. sheet asphalt on 8 in. concrete, Beechwood Ave. $37,322, Barton Ave. $24,377, Majestic Ave. $26,413, Petoskey Ave. $19,789, Proctor Ave. $46,508, Rosemary Ave. $39,818, Sparta Ave. $33,815. Ohio Ave. $30,831, Wyoming Ave. $77,466, Wilshire Ave., $39,439, and Warren Ave. $184,-397; to Cleveland Trinidad Paving Co., 402 Hammond Bldg., Parkside Ave. $39,331. Noted June 12.

Wis., Milwaukee—Dept. Pub. Wks., paving Jefferson St., sandstone, to Tallmadge & Hunt Constr. Co., 445 Milwaukee St., $32,690; Midland St., asphaltic concrete, to Badger Constr. Co., 97 Wisconsin St., $20,-782; 6 alleys, concrete, to Bodemann Constr. Co., 691 48th St., $33,886; 2 alleys, concrete, to F. W. Blodgett Constr. Co., 521 Newton Ave., $7,144; 1 alley, concrete, to Parkinson Constr. Co., 322 27th St., $2,078.

Wis., Milwaukee — Milwaukee Co., concrete surfacing 2.7 mi. Hopkins Rd., to McGucken-Vander Heyden Co., 314 Fowler St., $77,520, 1.6 mi. Old Chicago Rd., to Kroening Constr. Co., Mitchell St. and 39th Ave., $48,916. Noted June 19.

N. D., Jamestown—Stutsman Co., grading 8 mi. Federal Aid Project 239, 48,150 cu.yd. earth and 854 cu.yd. rock excav., 3,038 cu.yd. overhaul, culverts, etc., to Holman, Webster & Son, Turtle Lake, $16,486; graveling same 10,926 cu.yd. load, unload and spread, 37,643 cu.yd. gravel, to W. H. Noel, Jamestown, $9,088.

Minn., Duluth—Improving 1st St., 18,-515 sq.yd. Trinidad asphalt on concrete, 5,170 cu.yd. excav., also 3,540 ft. 10- to 20-in. sewers, to D. H. Clough Co., 405 Polladio Blvd., $99,184.

Kan., Oskaloosa—Grading and concrete surfacing 1.009 mi. Federal Aid Project 178, Jefferson Co., to Mitzger & Evans, Valley Falls, $57,276. Engrs. est. $59,126. Noted May 22.

Kan., Salina—Grading and sand clay surfacing 7.015 mi. Federal Aid Project 45-A

Streets and Roads (Continued)

and B, 18 ft., Salina Co., to F. Eberhardt Paving Co., Salina, $51,576. Engrs. est. $58,795. Noted May 29.

Neb., Lincoln—Asphaltic concrete paving, curbing and guttering in Dist. 538, to Able Constr. Co., 318 Terminal Bldg., $59,378. Engrs. est. $60,000.

Neb., Omaha—H. Beal, city engr., City Hall, 200,000 sq.yd. paving to J. J. Parks Co., 4 Elks Bldg., Natl. Constr. Co., 310 Arthur Bldg., J. Sherlock, and Carl Noble & Co. Materials to be determined later. Noted June 5.

Neb., Omaha—H. Beal, city engr., City Hall, asphaltic concrete paving in various districts, to Jas. J. Parks Co., 4 Elks Bldg., and Natl. Constr. Co., 310 Arthur Bldg., $300,000 each. Engrs. est. $300,-500 each. Noted June 5.

Mont., Shelby—To Fortune & O'Connor, Fargo, N. Dak., concrete sidewalks in Dists. 8 and 9, $18,414 and $6,057 respectively, sewers in Dist. 14, $14,579. Noted May 8.

Tex., Bay City—Matagorda Co., grading and shell surfacing 4.89 mi. State Highway 60, Federal Aid Project 428, 15 ft., to J. M. Neary and L. M. Le Tulle, Bay City, $12,552; drainage structures, to Dotson & White, Bay City, $8,511; furnishing shell to Culver Shell Co., Matagorda, $11,-950. Engrs. est. $44,760. Noted June 12.

Tex., Carrizo Springs — Dimmitt Co., grading and shell and gravel surfacing, etc., 12.58 mi. State Highway 85, State Aid Project 483, 16 ft., (18,699 cu.yd. gravel and 10,807 cu.yd. shell to be furnished), to Evans & Greathouse, 1706 West 6th St., Austin, $59,596. Engrs. est. $76,011. Noted June 19.

Tex., Franklin—Robertson Co., grading, etc., 10.87 mi. State Highway 6, Hearne-Benchly Rd., 26 ft., to F. P. McElwrath, Corsicana, $94,637. Engrs. est. $98,000. Noted June 19.

Okla., Grandfield—Grading and paving 5 blocks West 2nd St., 6,150 sq.yd. concrete, 3,300 lin.ft. curbing, 2,100 cu.yd. excav., to Pearce Constr. Co., Edmond, $25,836. Engrs. est. $27,500. Noted June 12.

Idaho—Bureau of Highways, Boise, **(F. A. P. means Federal Aid Project, e. e. means engineers estimate)** grading F. A. P. 73-B, between Stations 239 and 311 plus 49 from Wallace to Mullan, Coeur d'Alene-Yellowstone Trail, Shoshone Co., to S. Orino, Kellogg, $25,340, e.e. $32,251; grading and paving F. A. P. 73-B, between Stations 2 plus 25 and 239 of same road, to Warren Constr. Co., Park Rose Bldg., Portland, Ore.; crushed rock surfacing 17.08 mi. F. A. P. 20-A and 20-B, between Bonners Ferry and Bonner Co. line, North and South Highway, Boundary Co., to Payne & Doust, Spokane, Wash., $38,176, e. e. $32,232; grading and surfacing 3.91 mi. F. A. P. 77 on same road between Bonners Ferry and Port Hill, to Standard Asphalt Paving Co., 517 Lincoln St., Spokane, Wash., $75,950, e. e. $67,943; grading 10.06 mi. F. A. P. 80, Old Oregon Trail Highway between Georgetown and Montpelier, Bear Lake Co., to Gleim & Shafer, $13,505, e. e. $12,636. Noted May 8.

Wash., Seattle—To J. L. Smith, Pioneer Bldg., improving Evanston Ave., 96,000 sq. yd. 6 in. concrete paving $1.60 per sq.yd., 8,750 sq.yd. 7 in. concrete paving $1.84, 8,800 lin.ft. 5 in. curbing $0.55, 56,500 lin. ft. concrete curbing $0.32, 2,300 cu.yd. excav. $0.52, 30,500 cu.yd. subgrade $0.52, total $301,588. Engrs. est. $345,804. Noted June 19.

Wash., Seattle—Bd. Pub. Wks., improving Dibble Ave., et al., 155,000 lin.ft. curb and gutter, 26,000 cu.yd. excav., etc., to Odman Contg. Co., 2534 33rd St., $28,170. Engrs. est. $31,567.

California—State Hy. Comn., Sacramento, **(e. e. means engrs. estimate)** grading 8 mi. highway between 2 mi. north of Colfax and Gold Run, Placer Co., to C. R. Adams, Merced, $299,411, e. e. $313,735; widening 4.3 mi. road with concrete shoulders between Greenville and Livermore, Alameda Co., to W. A. Dontanville, Salinas, $51,648, e. e. $55,924; grading and seawall 1.2 mi. road between Sea Cliff and Rancho El Rincon, Ventura Co., to J. H. Tillman Co., Ry. Exch. Bldg., Portland, Ore., $382,103, e. e. $397,833. Noted May 15 and 29.

California—State Hy. Comn., Sacramento, **(e. e. means engineers estimate)** paving 4.5 mi. highway between Susanville and Johnstonville, Lassen Co., asphaltic macadam, to T. H. and M. C. Polk, Chico, $47,682, e. e. $57,138; 3.5 mi. highway between Redwood City and South boundary, San Mateo Co., asphaltic concrete and widened with macadam shoulders, to Freeman & Whiting, Fresno, $115,492, e. e. $126,806. Noted June 12.

Calif., **Glendale** — Improving portion Hermosita, Capistrano Aves., etc., 440,910 sq.ft. grading, 90,518 sq.ft. 5 in. and 185,-704 sq.ft. 3 in. oil macadam, 61,650 sq.ft. walks, 4,131 ft. 8 in. c.i. mains, 8,188 ft. 8 in. vitr. sewers, to E. L. Fleming, 324 West Dryden Ave., $103,425. Noted June 5.

Calif., Glendale — See "Streets and Roads."

Calif., Richmond—Improving McLaughlin, Lassen Sts., etc., 9,440 cu.yd. excav., 3,163 cu.yd. fill, 242,813 sq.ft. 8 in. Richmond standard macadam, 86,943 sq.ft. walks, 32,905 sq.ft. gutters, 16,896 ft. concrete curb, etc., to Hutchinson Co., 1706 Bway., Oakland, $78,225. Noted June 19.

Quebec — Provincial Highway Dept., Quebec, paving St. Hyacinthe-Melbourne Rd., in St. Andre d'Aiton, St. Liboire and Ste. Christine, to Cairnie Constr. Co. Ltd., Lennoxville, $53,913. Engrs. est. $60,000.

Ont., Niagara Falls—Will pave, etc., 35,-000 sq.yd. various streets, asphalt on concrete, by day labor. $150,000. T. S. Scott, city engr.

Ont., Peterboro — To J. Carroll, 507 Boliver St., 12,500 sq.yd. concrete pavement $2.04 per sq.yd., to Warren Bituminous Paving Co., 54 University Ave., Toronto, 14,500 sq.yd. bitulithic pavement on concrete, $2.85 per sq.yd. Engrs. est. $75,000.

Ont., Port Arthur — Will repair wood block, asphalt and concrete pavements on various streets, by day labor. $70,000. J. Antonisen, city engr.

Ont., Port Perry—Concrete paving, etc., 13,000 sq.yd. main streets to King & Holmes, Oakville, $30,000.

Ont., Sarnia—Will build 1 mi. water-bound macadam road, and 10,000 lin.ft. concrete sidewalks, by day labor. $25,000. W. V. Taylor, city engr.

Ont., St. Thomas — W. C. Miller, city engr., asphalt paving various streets, to Standard Paving Co., Manning Chambers, Ottawa, $1.65 per sq.yd., excav. and concrete base to Ponsford Constr. Co., St. Thomas, $0.80 for excav., $1.30 per sq.yd. concrete base. Engrs. est. $60,000.

Ont., Sudbury—Will build 10,000 sq.yd. bituminous macadam pavements and 5,000 lin.ft. concrete sidewalks on various streets, by day labor. $25,000. F. C. Lane, Town Hall, engr.

Ont., Toronto — To Kilmer & Barber, Adelaide St. E., asphalt paving Bancroft Ave. $4,393, Kingsmere Rd. $5,343, Selkirk Ave. $2,741, Welland Ave. $6,280, Pearl St. $2,282, brick block paving Austin Terrace, $3,631, grading Chatsworth Dr. $654, Cheritan Ave. $1,314, Chudleigh Ave. $512, Colton Ave. $375, Duplex Ave. $965, Welland Ave. $516; to Constructing & Paving Co., Confederation Life Bldg., asphalt paving Davenport Rd. $9,059, Oriole Gardens $2,596, Poplar Plains Crescent $5,154, Sighthill Ave. $4,948, Sellers Ave. $946; to Godson Contg. Co., Manning Chambers, asphalt surface on Bellvue Ave. $6,444, Clinton St. $10,287; to Warren Bituminous Paving Co., 54 University Ave., bituminous concrete paving Regal Rd. $3,114, Simpson Ave. $8,351, Tyrell Ave. $4,038, concrete curbs Davenport Rd. and Tyrell Ave. $0.72 and $0.70 per lin.ft.; to Dufferin Constr. Co., 210 Victoria St., concrete curbs on Simpson Ave. $0.70; to Asphaltic Concrete Co., 36 Toronto St., asphaltic concrete paving Gifford St. $6,112; to Dept. Pub. Wks., by day labor, asphaltic concrete surfacing Albany Ave. $1,102, Heath St. $4,834, Davenport Rd. $27,477, concrete curbs on Austin Terrace $0.79 per lin.ft.

Industrial Works

PROPOSED WORK

Mass., Templeton—Plant—Travers Mfg. Co., plans manufacturing plant. $100,000. Private plans.

N. Y., Buffalo—Mill Mosier & Summers, 1266 Seneca St., plans to rebuild mill recently destroyed by fire. $40,000.

N. Y., Malone—Plant—Chateaugay Ore & Iron Co., Chateaugay, plans rebuilding 5 story plant, recently destroyed by fire, here. $300,000. J. R. Tinney, mgr.

Tenn., Nashville—Factory—Carter Shoe Co., Louisville & Nashville R.R., plans 4 story and basement, brick addition. $100,000.

O., Akron — Substation — Northern Ohio Traction & Light Co., North Main St., plans fireproof, at Gorge power plant. $40,000.

Ind., Indianapolis — Factory — Standard Sanitary Mfg. Co., Bessemer Bldg., Pittsburgh, Pa., having revised plans prepared by Hunting-Davis Co., Century Bldg., Pittsburgh, Pa., 4 story and basement, 80 x 150 ft., Pratt and Senate Sts., here. $180,000. Former bids rejected. Noted Jan. 24.

Wis., Milwaukee — Factory — Standard Sanitary Mfg. Co., 311 5th St., had plans prepared by Hunting-Davis Co., 1150 Century Bldg., Pittsburgh, Pa., 5 story and basement, 82 x 175 ft., concrete and brick, plain foundation, 17th St. $250,000.

Wis., Milwaukee—Laundry—Ideal Laundry Co., 1520 Wells St., plans rebuilding 3 story, 60 x 132 ft., brick and timber or brick and concrete, recently destroyed by fire. $60,000. Architect not selected.

Wis., Sherwood—Plant—Western Lime & Cement Co., 68 Wisconsin St., plans rebuilding 2 story, brick and concrete, plain foundation, recently destroyed by fire. $40,-000. Architect not selected.

Tex., Decatur—Plant—Dodson & Milligan, plan ice plant and cold storage vaults. $45,000.

Tex., El Paso—Plant—El Paso Compress & Fumigation Co., making plans combination cotton compress and fumigation plant, incl. wooden platform, 20,000 bales capacity. $250,000. Private plans. L. J. Ivey, Fabens, interested.

Tex., Houston—Factory—Standard Drug Products Co., c/o Chamber of Commerce, plans 3 story, concrete. $200,000.

Okla., Texola—Plant—See "Waterworks."

Wash., Seattle—Factory—Vance Lumber Co., Stuart Bldg., having plans prepared by V. W. Voorhees, Eitel Bldg., 3 story and basement, 115 x 420 ft., rein.-con. and mill, Republican and Mercer Sts. $400,000.

Calif., Hawthorne — Factory — Green Epidosite Industrial Corp., 209 Bartlett Bldg., Los Angeles, plans factory, here. To exceed $40,000. G. Reid, 305 East Pennsylvania Ave., pres.

Calif., Long Beach—Plant—W. H. Austin, archt., Pacific Southwest Bldg., soon takes bids 4 story and basement, 50 x 150 ft., brick, Pine Ave., for Long Beach Press, 434 Pine Ave. Noted Sept. 13.

Calif., Los Angeles—Factory—Western Amer. Concrete Co., 1147 Glendale Blvd., plans factory, San Fernando Rd.

Calif., Los Angeles—Substation—Los Angeles Ry. Co., Railway Bldg., had plans prepared 1 story, 50 x 60 ft., brick, 6th St. Private plans.

Calif., San Francisco — Warehouse — Amer. Rolling Mill Co., 10th and Bryant Sts. plans probably rein.-con., to contain 20,000 sq.ft. or more floor space, Bryant and 10th Sts. $40,000 or more.

Que., Hull—Factory—E. B. Eddy Co. Ltd., had plans prepared factory. $500,-000. Private plans.

Que., Valleyfield—Plant—Walsh Plate & Structural Wks., Montreal, plans steel plant here. $200,000. Engineer and architects' names withheld.

Ont., Meaford—Plant—Hisey Packing Co., Creemore, plans packing and cold storage plant, here. $35,000.

Ont., Milverton — Factory — Hondelick Bros., plans to rebuild factory recently destroyed by fire. $500,000.

Ont., Toronto—Substation—Toronto Electric Comrs., Bd. Trade Bldg., plans 3 story, rein.-con., brick and steel electric substation, Willshire Ave. $320,000. Private plans.

BIDS DESIRED

Pa., Harrisburg—Power Plant—July 9 (extended date), by Dept. Properties and Supplies, Capitol Bldg., alterations and extensions to power plant in Capitol Buildings. A. W. Brunner, 101 Park Ave., New York City, archt. Noted May 22.

N. C., Wake Forest—Plant—July 8, by Building Com. Wake Forest College, central heating plant. $50,000. E. W. Timberlake, chn.

Ind., Indianapolis — Plant — Thornton-Levey Printing Co., 44 South Pennsylvania St., taking bids 2 and 3 story and basement, 42 x 195 ft., brick and steel, North Illinois St., $150,000.

Ind., Richmond—Factory—F. and N. Lawn Mower Co., taking bids 4 story, 75 x 100 ft., rein.-con., brick and steel. $100,-000. J. Mueller & Co., Palladium Bldg., archts. Noted June 12.

Ind., Richmond — Laundry — Richmond Home Laundry Co., taking bids 1 story and basement, 57 x 157 ft., rein.-con., brick and steel, $45,000. Werking & Son, Amer. Trust Bldg., archts. Noted June 12.

Wis., Milwaukee—Laundry—Ideal Laundry Co., 1520 Wells St., taking bids rebuilding 3 story, 62 x 130 ft., brick and timber, recently destroyed by fire. $60,000. Private plans. Noted June 26.

Wis., Milwaukee — Plant — M. Fernekes, archt., 915 Chestnut St., taking bids 3 story, 72 x 90 ft., brick and concrete, plain foundation, Muskego St., for Retailers Tallow & Calf Skin Assn., c/o J. Hermann, 2322 State St. $50,000. Noted June 12.

Minn., Owatonna—Plant—July 8, by Utilities Comn., 1,000 kw. steam electric generating plant, electric distribution and street lighting, and steam heating system. $350,000. A. L. Mullergren, Gates Bldg., Kansas City, Mo., consult. engr. Noted Jan. 3.

CONTRACTS AWARDED

Mass., Allston (Boston P. O.)—Machine Shop—H. F. Livermore Co., 100 Cummington St., Boston, will build 2 story, 75 x 245 ft., brick and timber, by day labor. $120,-000. Private plans.

Industrial Works (Continued)

Mass., Cambridge — Warehouse — Curtis Ink Co, East Cambridge, warehouse addition. First St, to Scully Co., 118 1st St., East Cambridge. Archts. est. to exceed $100,000.

Mass., Dorchester (Boston P. O.)—Stock—Edison Electric Illuminating Co., 39 Boylston St., Boston, stock building, 1165 Massachusetts Ave., here, to Fred T. Ley Co., Inc., 230 Boylston St., Boston. Archts. est. $200,000.

Mass., Jamaica Plain (Boston P. O.)—Service Station, etc.—Reardon Building Trust, 3168 Washington St., 1 story and basement, 60 x 150 ft., service station and repair shop, to Scully Co., 118 1st St., East Cambridge. Archts. est. $50,000.

Mass., Somerville—Service Station—International Harvester Co., of America, 43 Somerville Ave., 1 story 75 x 100 ft., to D. C. McIntire, Inc., 74 Broad St., Boston. Archts. est. to exceed $40,000. Noted May 8.

N. J., Bridgeton — Power House — See "Buildings."

Pa., Johnstown — Factory — Mitchell Spring & Mfg. Co., will build 1 story, approximately 100 x 100 ft. factory, by day labor. $40,000. Gray & Chaflin, Colonial Bldg., engrs.

Pa., Pittsburgh—Public Service—Philadelphia Co., 435 6th Ave., general contract 8 story and basement, 85 x 249 ft., 6th Ave. and Cherry Way, to W. T. Grange Constr. Co., Keenan Bldg. Archts. est. $1,000,000.

Md., Baltimore—Substation, etc.—United Railways Co., Continental Bldg., 1 story, 37 x 54 ft., brick and concrete, plain foundation, Caroline and Fairmount Aves., to DeCou & Davis, 6 East Mulberry St., $25,000. Noted June 19.

O., Cincinnati—Shop—Davis Welding Co., 1110 Richmond St., 1 story, rein.-con., brick and steel addition, Llewellyn St., to M. R. Hanke, 1009 Ross St. $95,000.

O., Cleveland—Factory—W. S. Tyler Co., C. Zimmerman, secy., 3615 Superior Ave., 2 story and basement, 110 x 115 ft., brick and rein.-con., East 36th St., to S. W. Emerson Co., 1900 Euclid Ave. Archts. est. $200,000. Noted June 12.

O., Hamilton—Shop—Ford Motor Co., Highland Park, Mich., 1 story, 102 x 201 ft., brick, steel and concrete addition, plain foundation, 4th St., here, to F. K. Vaughn Building Co., Dayton St. Archt. est. about $90,000. Noted May 15.

Ind., Indianapolis — Laundry — Crown Laundry Co., 2901 East Washington St., 2 story and basement, rein.-con., brick and steel, addition, to Hall Constr. Co., Board of Trade Bldg. Archts. est. $75,000.

Wis., Kenosha—Plant—Montemurro Bros., 117 South Newell St., pasteurizing and bottling plant, 2 story, 40 x 70 ft., concrete and brick, plain foundation, to J. Stocker, 67 North Brockett St. Archts. est. $40,000.

Wis., Racine—Factory—Belle City Malleable Iron Co., Kewaunee St., 1 story, 80 x 135 ft., brick and mill, plain foundation addition, Kewaunee St., to Nelson & Co., Janes Bldg. Archts. est. $45,000. Noted Apr. 24.

Wis., Two Rivers—Factory—Hamilton Mfg. Co., 1 story, 80 x 121 ft., brick and steel addition, plain foundation, to W. W. Oeflein, 86 Michigan St., Milwaukee. Archts. est. $40,000.

Wis., West Allis—Storage—Allis-Chalmers Mfg. Co., 7 story, 120 x 137 ft., brick and timber, plain foundation, to Klug & Smith Co., 69 Wisconsin St., Milwaukee. Noted May 29.

Mo., Poplar Bluff—Sawmill, etc.—Bimel Ashcroft Mfg. Co., will rebuild plant recently destroyed by fire, by day labor. $65,000. Private plans.

Mo., St. Louis—Service-Terminal Railroad Assn., 1800 Market St., will build railroad service building, 2 story, 28 x 49 x 81 ft., rein.-con. and brick, 3200 Scott St., by day labor. $40,000. Private plans.

Ark., Little Rock—Laundry—Imperial Laundry Co., 1101 Main St., general contract 2 story, brick and concrete, 15th and Main Sts., to J. H. Leveck & Sons, St. Marys St. $35,000.

Calif., Fillmore—Packing Plant—Fillmore Citrus Assn., will build rein.-con. and hollow tile, 150 carload capacity, by day labor under supervision of D. J. Haire, 1051 South Manhattan Pl., Los Angeles.

Calif., San Francisco—Factory—Buckley Door Co., Quint and Evans Aves., 1 story factory, to Meyer Bros., 1 Montgomery St., $42,000.

Ont., North Bay—Shops—Temiskaming & Northern Ontario Ry. Co., shops, to Stuart & Sinclair, Hamilton, $75,000.

Ont., Toronto — Sub-Station — Toronto Electric Comrs., Bd. Trade Bldg., general contract 2 story, 60 x 80 ft., rein.-con., brick and steel, plain foundation, Carlaw Ave., to Archibald & Holmes, 709 Yonge St. Archts. est. $150,000.

Buildings

PROPOSED WORK

Mass., Boston—Hospital—City Building Dept., City Hall, plans hospital, Harrison Ave., $750,000. J. H. Mahoney, comr. Engineer and architect not selected.

Mass., Boston—Loft—Hudson Building Co., c/o J. Barron, 85 Albany St., having preliminary plans prepared by Monks & Johnson, 99 Chauncy St., 12 story and basement, 125 x 125 ft., brick and terra cotta, 69-85 Kneeland St. $600,000.

Mass., Cambridge — Administration — Harvard University, plans administration building at corner College yard on site of old dance hall. $200,000. W. Lawrence, bishop, chn. Engineer and architect not selected.

Mass., Waltham — Church — St. Mary's Roman Catholic Church, 133 School St., plans new church, Main and Warren Sts. $150,000. Engineer and architect not selected.

Mass., Wellesley — Administration — Wellesley University plans brick and steel, plain foundation, on campus, $500,000.

Conn., New Haven—Hospital—Trustees St. Raphael's Hospital, Grove St., had sketches made by L. A. Walsh, 51 Leavenworth St., 4 story and basement, brick. $180,000-$190,000.

N. Y., Brooklyn — Synagogue — Union Temple, Bedford and Lafayette Aves., soon takes bids brick, steel and stone, plain foundation, Eastern Parkway and Plaza St. $1,000,000. A. W. Brunner, 101 Park Ave., New York, archt. and engr.

N. Y., Buffalo—Apartment—J. S. Rowe, Roanoke Hotel, Elmwood Ave. and Chippewa St., had plans prepared by R. R. Rowe, engr., Roanoke Hotel, 10 story, rein.-con., brick and steel, South Elmwood Ave. $400,000.

O., Dayton—Recreation, Auditorium, etc.—Schwind Realty Co., Realty Bldg., having plans prepared by Schenk & Williams, Mutual Howe Bldg., 3 story and basement, 100 x 112 ft., rein.-con., plain foundation, Main St. $175,000.

N. Y., New York—Church—St. Marks Methodist Episcopal Church, c/o Sibley & Featherston, archt., 101 Park Ave., having plans prepared brick, steel and stone, plain foundation, St. Nicholas Ave. and 137th St. $450,000. R. D. Kimball, 15 West 38th St., engr.

N. Y., New York — Offices — Syndicate Trading Co., c/o Cross & Cross, archts. and engrs., 385 Madison Ave., having plans prepared two 14 story, brick, steel and stone, plain foundations, 240 Madison Ave. $500,000 each.

N. Y., New York — High School — Bd. Educ., 500 Park Ave., having sketches made by W. H. Gompert, archt. and engr., Flatbush Ave. extension and Concord St., Brooklyn, brick, steel and stone, plain foundation, 103rd St. and 5th Ave. $1,000,000.

N. Y., New York—School—Bd. Educ., 500 Park Ave., soon takes bids P. S. 136, brick, steel and stone, plain foundation, Edgecombe Ave. $1,150,000. W. H. Gompert, Flatbush Ave. extension and Concord St., Brooklyn, archt. and engr.

N. Y., New York — Theatre — F. F. Proctor, c/o T. W. Lamb, archt. and engr., 644 8th Ave., having plans prepared 3 story, brick, steel and stone, plain foundation, Lexington Ave. between 86th aad 87th Sts. $650,000.

N. J., Asbury Park—Hotel—Berkeley-Carraret Hotel Corp., c/o Warren & Wetmore, archts., 16 East 47th St., New York City, having plans prepared brick and stone, plain foundation, Sunset and 6th Aves., here. $3,000,000.

N. J., Atlantic City—Hotel—Maynicke & Franke, archts. and engrs., 25 East 26th St., New York City, preparing plans 15 story, brick, steel and stone, plain foundation, on boardwalk between Providence and Boston Aves., here. $3,800,000. Owner's name withheld.

N. J., Bound Brook—School—School Bd. plans Washington School, Union Ave. $280,000. J. N. Pierson & Son, 175 Smith St., Perth Amboy, archts.

N. J., Camden—Laboratory, etc.—Victor Talking Machine Co., Front and Cooper Sts., preparing plans recording laboratory, Front and Cooper Sts., $500,000, kitchen and office building, Cooper St. between Point and Ambler Sts. $300,000. Architect and engineer not announced.

N. J., Woodbury—County—Bd. Freeholders Gloucester Co., Court House, rejected bids June 12, 3 story and basement, 97 x 117 ft., Delaware Ave. $300,000. Will readvertise. C. R. Peddle, 136 South 4th St., Phila., archt. Noted May 29.

Pa., Beaver Falls—Church—First Presbyterian Church having plans prepared by J. C. Fulton & Son, Thompson Ruby Bldg., Uniontown, 2 story and basement, 100 x 166 ft., stone and steel, 8th Ave. $160,000.

Pa., Chester—School—School Bd., G. S. Mitchell, pres., Larkins Bldg., having plans prepared by Ritter & Shay, North American Bldg., Phila., 2 story and basement, 42d and Melrose Sts.

Pa., Phila.—Hospital—Jewish Hospital, York and Tabor Rds., having plans prepared by H. W. Caster, Stephen Girard Bldg., 5 story and basement, 60 x 160 ft. $500,000.

Pa., Olyphant — Church — St. Patricks Church T. J. Murphy, pastor, having plans prepared by J. J. Howley, Traders Bank Bldg., Scranton, 2 story and basement, stone and steel. $150,000.

Pa., Waynesburg—Church—Presbyterian Church Society having preliminary plans prepared by Smith & Walker, 80 Boylston St., Boston, Mass., church. $150,000.

D. C., Wash.—Apartment—Kaleb Apartment Co., having revised plans prepared by Stern & Tomlinson, Continental Trust Bldg., apartment, 11th and A Sts. $200,000. Noted May 1.

D. C., Wash.—Apartment—B. Robbins, Natl. Metropolitan Bank Bldg., 613 15th St. N. W., had plans prepared by Stern & Tomlinson, Continental Trust Bldg., apartment, 17th and Kenyon Sts. N. W. $250,000.

D. C., Wash.—Memorial—Womans Universal Alliance, 1519 N. H. Ave., having plans prepared by F. B. Hoffmann, 147 East 51st St., New York City, memorial building and tower. $1,000,000.

Fla., Daytona—Hotel—Rio Vista Hotel Co. plans 150 room hotel in Rio Vista Subdivision. $250,000. G. W. Hurlburt, Jamestown, N. Y., pres.

Fla., Tampa—Bank and Office—Florida Mortgage, Title & Bonding Co. plans 12 story, Franklin and Lafayette Sts. $750,000. C. H. Brown, pres.

Miss., Jackson—Schools—Election in July $400,000 bonds for new Junior high school and improving other schools. H. V. Watkins, chn. Bd. Educ.

O., Cheviot (Cincinnati P. O.)—School—Cheviot Twp., having plans prepared by S. Hannaford & Sons, 1024 Dixie Terminal Bldg., Cincinnati, 1 story, rein.-con., brick and stone, Harrison Park. $219,000.

O., Cleveland—Apartment—W. H. Mason, c/o W. R. Powell, archt., Rose Bldg., had plans prepared 3 story and basement, 56 x 124 ft., brick, 1403 Mentor Ave. $150,000.

O., Gates Mills—Farm Cottages, Garage, etc.—W. T. White, pres. White Sewing Machine Co., 7821 St. Clair Ave., Cleveland, had plans prepared by Bohnard & Parsson, 1900 Euclid Ave., Cleveland, 1 and 2 story, 200 x 300 ft. farm cottages, garage, stables, riding ring kennels, brick, steel and concrete, here. $150,000.

O., Youngstown — Apartment — I. M. Hogg, Stambaugh Bldg., Cleveland, had plans prepared by L. R. Walker and J. L. Mauer, 1900 Euclid Ave., Cleveland, 3 story and basement, 101 x 104 ft., brick, here. $150,000.

Ind., Gary—Hotel—J. Lincoln, c/o H. Erickson, archt., City Hall, having plans prepared 3 story and basement, 63 x 125 ft., rein.-con., brick and steel, 5th St. $150,000.

Mich., Detroit—School—Bd. Educ., 1354 Bway. Ave., having plans prepared by Malcomson & Higginbotham, 1217 Griswold St., 2 story and basement, 162 x 385 ft. rein.-con., brick and steel, plain foundation, LaSalle Blvd. $750,000.

Ill., Chicago—Fine Arts—C. A. Chapin Estate, 410 South Michigan Ave., having plans prepared by Rebori Wentworth & Dewey, 332 South Michigan Ave., 6 story, 20 x 170 ft., fireproof annex, 421 South Wabash Ave. with bridge connecting Michigan Ave. building. $200,000.

Ill., Chicago—Store, etc.—N. K. Aranoff, pres. Book Shop bindery, 314 West Superior St., plans 5 story store, loft and office building, 3746 South Michigan Ave. $350,000.

Ill., Rock Island—School—Villa de Chantal School, Sisters of Visitation, having preliminary plans prepared, 2 and 3 story, brick and concrete. $150,000. Private plans.

Wis., Milwaukee — Apartment — Deuster, Schwartz & Keuper, 530 Grand Ave., having plans prepared by H. G. Lotter, 427 Milwaukee St., 3 story and basement, brick and concrete plain foundation, Prospect Ave. $150,000. Noted May 29.

Wis., Milwaukee — Apartment — Deuster, Schwartz & Keuper, 530 Grand Ave., having plans prepared by H. G. Lotter, 427 Milwaukee St., 3 story and basement, brick and concrete, plain foundation, Grand Ave. and 17th St. $150,000. Noted June 5.

Wis., Milwaukee — Church — Immanuel Lutheran Congregation, C. Dietz, pastor, 1122 Garfield Ave., having revised plans prepared by H. C. Haeuser, 445 Milwaukee St., 2 story, brick, tile and stone, plain

Buildings (Continued)

foundation, Teutonia Ave. $150,000. Former bids rejected. Noted May 8.

Wis., Milwaukee — Hospital — Deaconess Hospital, 1815 Grand Ave., had plans prepared by Leiser & Holst, 105 Wells St., 4 story and basement, brick and concrete addition, plain foundation, Grand Ave. $150,000.

Wis., Milwaukee—Office—English Woolen Mills Co., 204 3rd St., plans 8 story, 120 x 152 ft., brick and concrete, plain foundation. Wells and 3rd Sts. $400,000. Architect and engineer not selected.

Wis., Milwaukee—Office—R. B. Williamson, archt., 405 Bway., making plans 10 story and basement, 52 x 150 ft., brick and concrete, plain foundation, 2nd St. $250,000. Owner's name withheld.

Kan., Manhattan — Church — Methodist Episcopal Church having plans prepared by T. W. Williamson & Co., Central Natl. Bank Bldg., Topeka, 2 story and basement, 68 x 126 ft., native stone and slate. $150,000. Noted Aug. 23.

Tex., Houston — Schools — Bd. Educ. voted $3,000,000 bonds five junior high schools and miscellaneous buildings. J. C. McVea, city engr. Noted May 29.

Okla., Bartlesville — High School — Bd. Educ. having plans prepared by J. H. Felt & Co., 802 Grand Ave. Temple, Kansas City, Mo., 3 story and basement, rein.-con., brick and stone, 4th St. $360,000. Noted June 12.

Ore., Ashland — Hotel — Tourtellotte & Hummel, archts., Failing Bldg., Portland, preparing plans and take bids about Aug. 1, 9 story, 80 x 122 ft., rein.-con., stone and terra cotta, plain foundation, East Main and 1st Sts., here, for Ashland Hotel Co., R. W. Price, pres. $250,000.

Calif., Belmont — Convent — College of Notre Dame, c/o J. J. Donovan, Tappscott Bldg., Oakland, having plans prepared rein.-con. $250,000.

Calif., Los Angeles — Hospital — J. C. Austin and F. M. Ashley, archts., 1125 Detwiler Bldg., soon take bids, Class A, rein.-con., Ocean View Ave., for St. Vincents Hospital, 1151 Sunset Blvd. To exceed $1,000,000. Noted Sept. 20.

Calif., Los Angeles—Store and Loft—R. N. Park, c/o W. S. Hebbard, archt., I. W. Hellman Bldg., having plans prepared 4 story and basement, brick, 7th St. $300,000.

Calif., Pasadena—Exchange—Home Telephone Co., 70 North Raymond Ave., having plans prepared 7 story and basement, rei.n-con., East Colorado St. To exceed $150,000. Private plans.

Calif., Pasadena—Salesroom, Loft, etc.—Pasadena Furniture Co., 83 North Raymond Ave., having plans prepared by Curlett & Beelman, Union Bank Bldg., Los Angeles, 7 story and basement, approximately 75 x 180 ft., Class A, East Colorado Ave.

Calif., Sacramento—High School—Voted $550,000 bonds, fireproof junior high school. C. Hughes, secy. Bd. Educ. Noted Feb. 14.

Calif., San Francisco—High Schools—City and San Francisco Co. having plans prepared by Joseph & Stone, New Call Bldg., one junior high school, $300,000, and by J. Reid, Jr., 1st Natl. Bank Bldg., two junior high schools, $600,000.

Calif., San Francisco—Warehouse—J. A. Roebling & Sons Co., 646 Folsom St., making plans 1 story, 200 x 400 ft., concrete and steel, on block bounded by 16th, 17th, De Haro and Carolina Sts. Private plans. $250,000 or more.

Calif., San Jose—High School—Bd. Educ. having plans prepared by W. H. Weeks, 369 Pine St., San Francisco, 2 story, rein.-con. junior high school, Santa Clara St. $400,000.

Ont., Petrolia—High School—Bd. Educ. plans 2 story and basement, 8 room, brick, steel and tile, plain foundation. $150,000. Engineer and architect not selected.

BIDS DESIRED

Mass., Boston—Garage—July 2, by H. M. Haven, and L. T. Hopkins Inc., archts. and engrs., 11 Beacon St., 8 story and basement, 120 x 150 ft., Beach St. between Washington St. and Harrison Ave., for Jordan Marsh Co., Washington St. $500,000.

Mass., Watertown—Warehouse—F. W. Webb Mfg. Co., 50 Elm St., Boston, taking bids 1 story and basement, 60 x 100 ft., rein.-con. and brick, Arsenal St., here. 40,000. McLaughlin & Burr, 88 Tremont St., Boston, archts.

Mass., Winthrop—School—Bd. Selectmen taking bids 2 story, rein.-con. and brick, Herman St. $280,000. Brainerd & Leeds, 89 Franklin St., Boston, archts. Noted May 15.

Wis., Milwaukee — Apartment — June 30, by M. Tullgren Sons, 425 East Water St., 3 story and basement, 100 x 122 ft., concrete and brick, plain foundation, Prospect Ave. $250,000. Owners name withheld.

N. Y., Auburndale (Flushing P. O.) — School—July 8, by W. H. Gompert, supt. school buildings, Flatbush Ave. extension and Concord St., Brooklyn, P. S. 130, 42nd Ave. from Cross Island Blvd. to 201st St., here.

N. Y., Binghamton—Hospital—July 9, by Bd. Contract & Supply, 3 new buildings at City Hospital. $500,000. W. H. Whitlock, S. M. Bldg., archt.

N. Y., Mt. Pleasant—Garage, etc.—July 7, by F. L. Merrit, clk. Bd. Supervs. Westchester Co., Court House, White Plains, garage and dairy barn in connection with Grassland Hospital, here, Walker & Gillette, 128 East 37th St., New York, archts.; adv. E. N.-R. June 26.

N. Y., St. George—School—July 8, by W. H. Gompert, supt. school buildings, Flatbush Ave. extension and Concord St., Brooklyn, P. S. 39, Sand Lane from McFarland to Major Aves., South Beach, Richmond Boro.

N. J. Lambertville—High School—June 30, by Bd. Educ., 2 story, new school building, and alterations to present high school and 3rd Ward school. $180,000. W. A. Klemann, 1st Natl. Bank Bldg., Trenton, archt.

Pa., Norristown—Court House—July 22, by W. C. Irvin, controller Montgomery Co., renovating and repairing court house; adv. E. N.-R. June 26.

Pa., Phila.—Club—July 8, (extended date) by Penn Athletic Club of Phila., c/o E. B. Morris, Jr., chn. Building Com., 9 story, basement and subbasement, 175 x 195 ft., steel, plain foundation, Rittenhouse Sq. and 18th St. between Walnut and Locust Sts. $3,000,000. W. H. Gravell and I. H. Francis, Otis Bldg., engrs. Zantzinger, Borie & Medary, Otis Bldg., archts.

Pa., Taylor—High School—July 15, by Secretary School Bd., 2 story and basement, 116 x 150 ft., steel and brick, concrete pile foundation. $250,000. J. J. Howley, Traders Bank Bldg., Scranton, archt.

Md., Baltimore—Bank and Office—June 30 by F. A. Fletcher, archt., 407 North Charles St., 6 story, 81 x 81 ft. brick and steel, Gay and Fallsway Sts., for Old Town Natl. Bank, Gay and Exeter Sts. $375,000. Noted June 19.

N. C., Charlotte—Municipal, etc.—July 8, by J. O. Walker, mayor, 3 story and basement, 70 x 165 ft. municipal building, limestone and marble, 2 story and basement, 78 x 94 ft. court building, brick, also 2 story and basement, 78 x 94 ft. fire building, brick. $500,000. C. C. Hook, Trust Bldg., archt. Noted Jan. 24.

O., East Cleveland (Cleveland P. O.)—Apartment—Ideal Impvt. Co., c/o S. Spira, 2607 Ontario St., taking bids 3 story and basement, 80 x 110 ft. brick, 13706 Superior Ave. $175,000. Noted May 29 under Cleveland.

O., Cleveland—Commercial and Apartment—I. Brezin, 10110 Cleveland Ave., taking bids 3 story and basement, 47 x 174 ft., brick, 915 Parkwood Drive, $150,000. M. Weis, Union Bldg., archt.

Ind., Terre Haute—Office—Citizens Gas & Fuel Co., 636 Wabash Ave., taking bids 4 story and basement, rein.-con., brick and steel. $250,000. Shourds-Stoner Co., Tribune Bldg., archts. Noted June 12.

Mich., Detroit—School—July 7, by C. A. Gadd, bus. mgr. Bd. Educ., 2 story and basement, 162 x 385 ft., rein.-con., brick and steel, plain foundation, LaSalle Blvd. $750,000. Malcomson & Higginbotham, 1217 Griswold St., archts.

Wis., Racine—School—July 3, by Bd. Educ., A. Schafer, secy., (1st unit) Theodore Roosevelt School, 2 story and basement, 64 x 149 ft., brick and tile, plain foundation. $150,000. J. M. Matson, Baker Bldg., archt.

Kan., Parsons—Schools—July 21, by Bd. Educ., new 3 story, 167 x 280 ft. high school, also 2 story, 52 x 120 ft. addition, both brick and stone. $400,000. T. W. Williamson & Co., 312 Central Bank Bldg., Topeka, archts. Noted Mar. 27.

Mo., St. Louis — Market and Garage — July 22, by Bd. Pub. Serv., 208 City Hall, 3 story and basement, 226 x 270 ft., rein.-con., brick, stone and steel, Bway., 6th, Lucas and Morgan Sts. H. Updike and L. R. Bowen, 301 City Hall, engrs. E. E. Christopher, 301 City Hall, archt.

Wash., Seattle—Lodge—July 1, by F. J. Peters, archt., Seaboard Bldg., 2 story, 100 x 200 ft., fireproof, 22nd and Market St., N. W., for Ballard Order of Eagles. $400,000. Noted May 8.

Calif., Long Beach—Theatre and Store—C. Boller, archt., 340 Douglas Bldg., Los Angeles, taking bids 3 story and basement, rein.-con. and steel, Seaside Blvd., here. $150,000. Owners name withheld.

Calif., Los Angeles—Auditorium—J. C. Austin, archt., 1125 Detwiler Bldg., and A. M. Edelman, associated archt., H. W. Hellman Bldg., taking bids and open same about July 31, Class A rein.-con., Royal and Jefferson Sts. for Al Malaikan Temple A. A. O. N. M. S. $1,250,000.

Calif., San Francisco—High School—July 9, by Bd. Pub. Wks., Class A, Fell St. for city and San Francisco Co., general contract $700,000, mechanical equipment $70,000, plumbing $40,000, electrical work $48,000. J. Reid, Jr., 1st Natl. Bank Bldg., archt. Steel contract awarded.

BIDS RECEIVED

N. Y., New York—Garage—H. Bruckner, pres. Bronx Boro, 3rd and Tremont Aves., June 17, constructing garage, East 181st St., from Balaban Gordon Co., 116 West 39th St., $138,920 plus $2,500, plus $9,850.

N. Y., New York—School—Dept. Educ., at office W. H. Gompert, supt. school buildings, Flatbush Ave. extension and Concord St., Brooklyn, (a) general contract (b) tunnel, P. S. 173, Ft. Washington Ave. from West 173rd to 174th Sts., from C. Meads & Co., 217 West 14th St., (a) $730,885, from Lustbader Constr. Co., 423 Madison Ave., (b) $210,606. Noted June 5.

Mich., Detroit—School—Bd. Educ., 1354 Bway., 2 story and basement, rein.-con., brick and steel, plain foundation, Cameron Ave., from Martin & Kraussman, 606 Woodward Ave., $540,750. Noted June 19.

Calif., Alameda—School—City, 2 story and basement, school addition, general contract, from C. H. Peterson, 185 Stevenson St., San Francisco, $101,500; excavating, concrete and brick, from White & Gloor, Monadnock Bldg., San Francisco, $25,725. Noted Feb. 21.

Calif., Palo Alto — Theatre — Weeks & Day, archts., 315 Montgomery St., San Francisco, rein.-con., University Ave., and Ramona St., here, from L. J. Cohn, 110 Sutter St., San Francisco, for Palo Alto Theatre Co., approximately $146,500. Noted June 12.

CONTRACTS AWARDED

N. H., Litchfield (mail Thorntons Ferry)—Library—Town, memorial library, to D. M. McCullough, 703 Pine St., Manchester. Archts. est. $150,000.

Mass., Brookline (Boston P. O.)—School—Temple Ohabie Shalom, B. Snider, chn., 18 Tremont St., Boston, 2 story and basement, 60 x 160 ft., Beacon and Marshall Sts., here, to Canter Constr. Co., 6 Beacon St., Boston. Archts. est. $150,000.

Mass., Brighton (Boston P. O.)—Hospital—Florence Crittendon League, 506 Tremont Temple, Boston, 3 story and basement 32 x 106 ft., brick and stone, Oak Sq., Perthshire Rd. and Dunboy St., here, to L. P. Soule & Son, 80 Boylston St., Boston. Archts. est. $250,000. Noted June 5.

N. Y., Brooklyn—Clubhouse—R. T. Short, archt. and engr., 370 Macon St., 9 story, brick, steel and stone, plain foundation, Prospect Park West and Union St., to W. Kennedy Constr. Co., 215 Montague St., for Knights of Columbus, 56 South Portland Ave. Archts. est. $1,185,000.

N. Y., Canton—County—Bd. Supervs. St. Lawrence Co., general contract new county building, to Munn & Shea, Cote St., Montreal, Que., $117,000. Noted May 22.

N. Y., New York—Offices—Natl. Bible Institute, 214 West 35th St., brick, steel and stone, plain foundation, 330 West 55th St., to J. Lowry, 270 Madison Ave. Archts. est. $1,000,000.

N. J., Bridgeton—Hospital—Stearns & Woodnutt, archts., St. Girard Bldg., Phila., 3 story and basement 40 x 140 ft. hospital, and 2 story, 42 x 90 ft. power house, brick and steel, plain foundation. Irving and Magnolia Aves., to D. A. McClelland, Drexell Bldg., Phila., Pa. Archts. est. $150,000. Noted June 5.

Pa., Elwood City—Church, etc.—Methodist Episcopal Congregation, general contract 1 story and basement, 45 x 105 ft. and 50 x 60 ft., church and Sunday school, 5th and Crescent Sts., to P. Schenck, Elwood City. Archts. est. $150,000.

Pa., Windber—High School—Bd. Educ., general contract 2 story and basement, 56 x 162 ft., brick, tile and steel, to Wilson Constr. Co., Johnstown. Archts. est. $170,000. Noted Feb. 28.

Pa., Upper Darby—High School—School Bd., general contract 2 story and basement, 58 x 260 ft., Lansdowne Ave., to D. A. McClelland Co., Drexel Bldg., Phila., $337,452; heating, to Bowers Bros. & Co., 2015 Sansom St., Phila., $45,356; plumbing, to W. Newell & Son, 1707 Sansom St., Phila., $25,378. Noted May 15.

Md., Baltimore—Warehouse—Canton Co., South and Water Sts., 3 story, 80 x 200 ft., concrete and steel, 12th Ave., to Price Constr. Co., Maryland Trust Bldg., $175,000. Noted June 5.

Md., Baltimore — Nurses Home — St. Josephs Hospital, Oliver and Eden Sts., 4 story, 75 x 135 ft., rein.-con. and brick, plain foundation, Oliver and Eden Sts., to Frainie Bros. & Haigley, 19 West Franklin St., $150,000.

Buildings (Continued)

D. C., Wash. — Church, etc. — Hamline Methodist Episcopal Church, 1500 9th St., church and community house, 16th and Allison Sts., to A. L. Smith Co., 819 13th St. N. W. $300,000. Noted May 1.

D. C., Wash.—Store—F. R. Jelleff, 1216 F St. N. W., addition to store to S. J. Prescott, 814 13th St., N. W., $300,000.

Fla., Sarasota—Hotel—W. H. Pepkorn, 712 Park St., Milwaukee, Wis., 7 story, 50 x 150 ft., on site of old Prentice Hotel, here, plastering, to E. G. Gale, Tampa, $13,195; electric work, to R. Parker, Bradentown, $4,139; painting, to W. Davis, Sarasota, $4,341; plumbing and heating, to H. F. Boubonnell, Sarasota, $26,800; concrete frame, to Ricketts & Haworth, 816½ Franklin St., Tampa, $46,500, etc., total cost $240,000. Noted Apr. 24.

La., Shreveport — Warehouse — Alcocke Estate, 4 story, 147 x 147 ft., rein.-con. and brick, Davis and Marshall Sts., to McConnell & McConnell, Shreveport. Archts. est. $150,000.

Tenn., Memphis—Garage and Sales Room —D. Dermon and A. Jett, 2 story, 183 x 245 ft., 44,000 sq.ft. parking space, concrete and steel, Gayoso and South 3rd St., to Hansen & Worden, 507 North Dunlap St., Memphis. Archts. est. $200,000. Noted Jan. 24, under "Industrial Works."

O., Cincinnati — Warehouse — General Electric Co., Provident Bank Bldg., 5 story, 94 x 185 ft., rein.-con. and brick, plain foundation, 3rd St., to Ferro Constr. Co., 3rd and Elm Sts. Archts. est. $500,000.

O., Dayton—Church—First Church of Christ Scientist, 2 story and basement, 50 x 200 ft., concrete, brick and stone, plain foundation, Rubicon St., to W. McIlroy, Springfield, $150,000.

Ind., La Porte—Hospital—Holy Family Hospital, 4 story and basement, 45 x 125 ft., rein.-con. and brick addition, to Larson & Danielson Constr. Co., La Porte. Archts. est. $160,000.

Ind., South Bend—Garage—De Rhodes Motor Co., 3 story and basement, 66 x 166 ft., rein.-con., brick and steel, North Lafayette St., to Fleischer Constr. Co., Builders Exchange Bldg., Minneapolis, Minn. Archts. est. $175,000.

Ind., South Bend—Hotel—H. H. Hayden, 726 East Cedar St., will build 3 story and basement, 50 x 198 ft., brick and steel, West Colfax St., by day labor. $200,000. I. M. Cohen, 708 Bway., Gary, archt. Noted May 22.

Ind., Terre Haute — Bank — First Natl. Bank, 513 Wabash Ave., remodeling, etc., building, to W. Caton & Son, 212 Arcade Bldg., $150,000 plus percentage basis.

Wis., Burlington—High School—School Bd., N. E. Karcher, clk., 2 story and basement, 92 x 180 ft., brick and tile, plain foundation, to Wisconsin Eng. & Constr. Co., 411 Bellin Bldg., Green Bay, $144,750. Noted May 29.

Wis., Green Bay — Community — Green Bay Columbus Club, C. K. Bong, chmn. building com., Sheridan Bldg., 3 story and basement, concrete and brick, plain foundation, to B. Beauregard, De Pere. Archts. est. $350,000. Noted Apr. 17.

Wis., Milwaukee—Apartment—Goodsitt & Helfaer, 4609 North Ave., 3 story and basement, 60 x 120 ft., brick and concrete, plain foundation, Lisbon Ave., to Steldt Constr. Co., 1137 16th St. Archts. est. $150,000.

Wis., Milwaukee—Dormitory—Concordia College, 3127 State St., 3 story and basement, 60 x 142 ft., concrete and brick, plain foundation, State St., to W. W. Oeflein, 86 Michigan St. Archts. est. $170,000. Noted June 12.

Wis., South Milwaukee—Store—R. B. Williamson, archt., 405 Bway., Milwaukee, 3 story and basement, 60 x 120 ft., brick and timber, plain foundation, here, to Czaplewski Bros., 1440 Midland Ave., Milwaukee, for Bettinger & Sons. Archts. est. $150,000. Noted June 12.

Minn., Minneapolis—School—Bd. Educ., general contract 3 story and basement, rein.-con., brick and tile addition, 15th Ave. N and 4th St., to Madsen Constr. Co., 848 Builders Exch. Bldg., $98,000. Noted June 5.

Kan., Manhattan — High School — Bd. Educ., general contract 2 story and basement, 80 x 158 ft., rein.-con., brick and stone, to M. J. Green, Manhattan. Archts. est. $150,000. Noted Mar. 20.

Mo., Caruthersville—Court House—Pemiscot Co., c/o F. Baird, co. clk., general contract 3 story and basement, rein.-con., brick and stone, to McCarthy Constr. Co., 1201 Chemical Bldg., St. Louis. Noted May 22.

Mo., Caruthersville—High School—School Dist. 18, 2 story and basement, 75 x 145 ft., concrete, brick and stone, to McCarthy Constr. Co., 1201 Chemical Bldg., St. Louis. Archts. est. $150,000. Noted May 22.

Mo., Koch—Kitchen, etc.—Bd. Pub. Serv., 208 City Hall, St. Louis, general contract 2 story, rein.-con., brick, stone and steel kitchen at Robert Koch Hospital, here, to E. Steininger Constr. Co., Laclede Gas Bldg., St. Louis, $58,836. 3 story and basement, 62 x 165 ft., rein.-con., brick, stone and steel infirmary, to J. J. Clark Constr. Co., Arcade Bldg., St. Louis, $226,885. Noted June 12.

Mo., St. Louis — Mercantile — Burdeau Realty Co., 801 Chestnut St., will build 2 story and basement, 150 x 160 ft., brick, concrete and stone, Washington St., by day labor. $160,000. J. A. Craven, Century Bldg., archts.

Tex., Houston—Store—W. T. Grant Co., 1009 Capitol St., general contract 3 story, 50 x 125 ft., brick, steel and concrete, Capitol St., to E. S. Newcome, Dan Waggoner Bldg., Ft. Worth, $129,000.

Okla., Wewoka—Court House—Seminole Co., 3 story and basement, 110 x 170 ft., rein.-con., brick and stone, general contract, to Daugherty-Nichols-Wilson Co., Muskogee. Archts., est. $160,000. Noted May 15.

Ore., Portland—Garage and Store—Multnomah Block, Inc., c/o H. F. Corbett, pres., Corbett Bldg., 2 story and basement, 100 x 252 x 480 x 560 ft., rein.-con. and mill, Washington, Morrison, Stout and 19th Sts., to Austin Co., Porter Bldg. Archts. est. $350,000.

Calif., Oceanpark (Santa Monica P. O.)—Theater—Raymond Amusement Co. will build 2 story, 100 x 175 ft., rein.-con., by day labor. $200,000. Noted Apr. 10.

Calif., Pasadena — Theatre — E. Gray, Bank of Italy Bldg., Los Angeles (representing owners), brick and concrete, Moline Ave., here, to Littleton Co., 608 East Colorado St., $155,000. Noted Apr. 12.

Calif., San Rafael — High School — San Rafael High School Dist., 1 story, rein.-con., to contain 25 classrooms and auditorium, general contract to Barenchi & Paganni, 327 Georgia St., Vallejo, $186,513. Noted June 19.

Calif., San Francisco—Apartment—Nineteen Hundred Six Bway., c/o contractors, 10 story and basement, rein.-con., Bway near Laguna St., to Quandt & Bros., Humboldt Bank Bldg., $165,000.

Que., Durocher—Apartment—Bigonesse & Bigonesse, archts., 182 St. Catherine St. E., Montreal, 4 story, 100 x 150 ft. apartment, to A. Bolleau, 848 Champagne St., Montreal, $149,000. Company to be formed later.

Que., Quebec—Hospital—Beaule & Morrissette, engrs., Quebec, main building 7 story, 12,600 sq.ft. floor space and two 6 story wings, 2,800 sq.ft. floor space, rein.-con., St. Sacrement St., to O. E. Morrissette Ltd., 236 Latourelle St., for Sisters of Quebec Hospital. $653,000. Noted May 29.

Federal Government Work

PROPOSED WORK

Ky., Fords Ferry—Clam Shell Buckets—U. S. Engineers, P. O. 72, Louisville plans to purchase three 1½ cu.yd. heavy excavating type clam shell buckets.

Ky., Louisville—Steel—U. S. Engineer, P. O. Box 72, takes bids about July 25, furnishing 247 tons structural steel for Dams 49 and 50, Ohio River.

California—Pumps—U. S. Engineer, Constructing Quartermaster, Fort Mason, San Francisco, soon takes bids, one 1,000 gal. and one 1,500 gal. single stage, centrifugal pumps, 25 hp.

BIDS DESIRED

Vt., St. Johnsbury—Post Office—July 14, by Treas. Dept. at office Supervising Archt., Wash., D. C., 1 story, 61 x 69 ft. post office, here; adv. E. N.-R. June 26.

N. Y., Waterloo—Post Office—July 15, by Treas. Dept. at office Supervising Archt., Wash., D. C., 1 story, 50 x 75 ft., brick, here; adv. E. N.-R. June 26.

Pa., Pittsburgh—Mezzanine—July 7, by Treas. Dept. at office Supervising Archt., Wash., D. C., constructing mezzanine fo Room 402, and repairing Post Office and Court House, here.

W. Va., Charleston—Extensions—July 10, by Treas. Dept. at office Supervising Archt., Wash., D. C., extensions to Post Office and Court House, here.

Ky., Louisville—Hydrated Lime—July 24, by U. S. Engineer, P. O. Box 72, furnishing 750 tons hydrated lime, for Dams 44, 45 and 46, Ohio River; adv. E. N.-R. June 26.

Ky., Louisville—Steel, Castings, etc.—July 22, by U. S. Engineer, P. O. Box 72, furnishing structural steel, castings, etc., for Locks 49 and 50, Ohio River; adv. E. N.-R. June 26.

Ky., Owensboro—Dwellings—July 7, by U. S. Engineer, War Dept., Wash., D. C., 2 lockeepers dwellings, at Dam 46, Ohio River. Noted June 5.

Ill., Jerseyville—Post Office—July 21, by Treas. Dept. at office Supervising Archt., Wash., D. C., 1 story, brick and tile post office here; adv. E. N.-R. June 26.

Ark., North Little Rock—Road, etc.—July 22, by U. S. Veterans Bureau, Room 791 Arlington Bldg., Wash., D. C., new bituminous macadam roads, and resurfacing and patching existing roads at U. S. Veterans Hospital 78, here. F. T. Hines, dir.; adv. E. N.-R. June 26.

Colorado—Road—June 30, by J. W. Johnson, dist. engr., 301 Customs House Bldg., Denver, grading, etc. 5 mi. Canon Sect. Cumbres Pass Natl. Forest Rd., Conejos Co. 10,052 cu.yd. rock and 31,324 cu.yd. common excav., etc.

California — Road — July 2, by C. H. Sweetser, dist. engr. U. S. Bureau Pub. Rds., 9 Main St., San Francisco, constructing 3.7 mi. Donner Pass Natl. Forest Rd., 70,000 cu.yd. excav., 52,000 lb. steel, etc.

Calif., San Francisco—Buildings—Spec. 5000—July 23, by Bureau Yards &Docks, Navy Dept., Wash., D. C., buildings at Marine Corps, here.

Calif., San Francisco—Grading—Spec. 4999—July 23, by Bureau Yards & Docks, Navy Dept., Wash., D. C., grading site for marine corps supply depot. Noted June 5.

BIDS RECEIVED

N. Y., Saranac Lake—Post Office—Treas. Dept. at office Supervising Archt., Wash., D. C., 1 story and basement, 68 x 73 ft. post office here from C. J. Burgess Co., Foster Bldg., Utica, $60,600. Noted May 8.

Pa., Dubois—Post Office—Treas. Dept. at office Spervising Archt., Wash., D. C., 60 x 95 ft. concrete and brick post office here from Regan Constr. Co., 2 East Lexington Ave., Baltimore, Md., 1st story, $60,900; 2nd story $79,600. Noted May 22.

Tex., Galveston—Compass Station—Spec. 4974—Bureau Yards & Docks, Navy Dept., Wash., D. C., radio compass station and quarters, etc., from J. W. Zempter, Galveston, $7,350. Noted June 5.

California—Road—C. H. Sweetser, dist. engr. U. S. Bureau Pub. Rds., 9 Main St., San Francisco, improving 15 mi. Yuba Pass Natl. Forest Rd., Sierra Co., from C. E. Crowley, Pacific Electric Bldg., Los Angeles, $141,133.

CONTRACTS AWARDED

Me., Bar Harbor—Compass Station—Spec. 4966—Bureau Yards & Docks, Navy Dept., Wash., D. C., compass station, here, to A. B. & J. R. Hodgkins, 42 Greeley Ave., $3,486. Noted June 5.

Pa., Hog Island—Compass Station—Spec. 4976—Bureau Yards & Docks, Navy Dept., Wash., D. C., repairs to quarters compass station and wharf at Naval Radio Sta., to W. L. Morrison Constr. Co., 613 15th St. N. W., Wash., D. C., $1,389 (60 days).

D. C., Wash.—Road and Gutters—Spec. 4986—Bureau Yards & Docks, Navy Dept., Wash., D. C., repairs to roads and gutters at Naval Hospital here to R. E. Boiseau, 5905 Blair Rd., $11,784. Noted June 5.

Fla., Jacksonville—Bulkhead and Pier—U. S. Engineer Office, War Dept., Wash., D. C., bulkhead and pier to C. E. Hillyer, Blum Bldg., $15,800. Noted May 1.

Ala., Florence—Steel Rods, Pipe, Buckets, etc.—U. S. Engineer Office, Florence, 14,520 ft. steel rods, 1 in. diam., to Atlantic Steel Co., South Ry. Belt Line, Atlanta, Ga., $1,575; 20 lengths black, wrought steel and flanged pipe, to Crane Co., 2 South 20th St., Birmingham, $3,900; 10 concrete buckets, to Insley Mfg. Co., Birmingham, 1,915; Items 1-24 inclusive, to Gulf States Steel Co., B. M. Bldg., Birmingham, $7,925; Items 25 and 26 to Tennessee Coal, Iron & R.R. Co., B. M. Bldg., Birmingham, $37; 40,000 sleeve nuts, to Nashville Machine & Supply Co., 123 3rd Ave. N., Nashville, Tenn., $2,848.

Ky., Louisville—Pumps—U. S. Engineer, P. O. Box 72, three 15 in. rope driven centrifugal water pumps, to Kingsford Fdry. & Machine Wks., 264 West 2nd St., Oswego, N. Y., $2,340. Noted May 22.

Ky., Louisville—Truck—U. S. Engineer, P. O. Box 72, one steel dump body truck, to Graham Bros. Truck Co., Evansville, Ind., $2,065. Noted May 29.

Mich., Hastings—Post Office—Treas. Dept. at office Supervising Archt., Wash., D. C., post office here to A. M. Lundberg, Times Bldg., St. Louis, Mo., $64,089. Noted Apr. 24.

Ill., Chicago—Derrick Boat—U. S. Engineer, Office, War Dept., Wash., D. C., steel derrick boat to Sturgeon Bay Dry Dock Co., Sturgeon Bay, Wis., $56,000. Noted May 22.

Ill., Chicago—Dredging—U. S. Engineer Office, 537 South Dearborn St., dredging in North Bend Branch Chicago River, 100,000 cu.yd., to Great Lakes Dredge & Dock Co., 103 South Michigan Ave., $33,000. Noted June 12.

Federal Government Work (Continued)

Ill., **Chicago**—Steel Barage—U. S. Engineer Office, War Dept., Wash., D. C., one 80 ft. steel barge to Midwest Boat & Barge Co., Grafton, Ill., $10,731. Noted May 22.

Calif., San Diego—Building, etc.—Spec. 4933—Bureau Yards & Docks, Navy Dept., Wash., D. C., buildings, roads and service connections, etc. at Naval Operating Base here to W. E. Kier Constr. Co., 813 1st Natl. Bank Bldg., $541,000.

FEDERAL POWER COMMISSION

Applications for Licenses and Permits

Applications

495—Pike Rapids Power Co., Duluth, Minn.—Wants preliminary permit for power dam in Mississippi River 4,000 ft. above mouth of Christy Brook.

496—Prairie River Power Co., St. Paul, Minn.—Wants preliminary permit for 21 ft. dam and power plant in Mississippi River near Aitkin, Aitkin Co.

497—Gauley Power Co., Union Bldg., Charleston, W. Va.—Wants preliminary permit for 2 power dams on Gauley River and 3 power dams on Meadow River, in Nicholas, Fayette and Greenbrier Counties.

498—Pub. Service Co. of Oklahoma, 301 World Bldg., Tulsa, Okla.—Wants preliminary permit for 40 ft. dam and power plant in Grand River, Delaware Co.

499—S. E. Kieffer, 57 Post St., San Francisco, Calif.—Wants preliminary permit for diverting Mokelumne River into Jackson Creek in Amador and Calaveras Counties.

500—Northwestern Power & Mfg. Co., 394 Dupont Bldg., Wilmington, Del.—Wants preliminary permit for diversion dam and power canal extending 3½ mi. in Elwana River, near Port Angeles, Clallam Co., Wash.

Unclassified

PROPOSED WORK

Playground—East Boston (Boston P. O.), Mass.—Park Dept., 33 Beacon St., Boston, plans playground, Condon, East Eagle and Glendon Sts., here. $82,000. J. B. Shea, chn. com.

Playground—Readville (Boston P. O.), Mass.—Park Dept., 33 Beacon St., Boston, plans playground, Sturgis and Bullard Sts., here. $30,000. J. B. Shea, chn. com.

Playground — Roxbury (Boston P. O.), Mass.—Park Dept., 33 Beacon St., Boston, plans playground, Heath St., adjoining Jefferson School. $85,000. J. B. Shea, chn. com.

Coal Loading Dock—Huntington, W. Va.—Philadelphia & Cleveland Coal Co., plans coal loading dock on Ohio River. $25,000. Graham, Scott & Wiswell, 1st Natl. Bank Bldg., engrs.

Transmission Line—Alabama—Alabama Power Co., B. M. Bldg., Birmingham, plans 44,000 volt transmission line from Decatur to Hapgood, near Muscle Shoals.

Subway—Nevada, Mo.—Voted $100,000 bonds subway under track Missouri Pacific, and Missouri-Kansas-Texas Railroads. Total $200,000. Railroads to pay half cost. Noted May 22.

Electric System — Tex., Crawford — See "Waterworks."

Health Resort—Marshall, Tex.—D. C. Driskell, Fuqua, plans walks, drives, sewers, miscellaneous improvements to develop Roseborough Springs into health resort. $100,000. Engineer not announced.

Subway—Long Beach, Calif.—Plans subway under Pacific Electric tracks at Pacific Ave. $170,000 or more. Cost to be borne by city and railroad. C. H. Windham, city mgr.

Ornamental Stret Lighting System—Los Angeles, Calif.—See "Streets and Roads."

Athletic Field—San Francisco, Calif.—San Francisco Baseball Club, 15th and Valencia Sts., G. A. Putnam, secy., plans bowl type athletic field with 2 deck grand stand, parking space for 25,000 autos, etc. $1,000,000. Engineer and architect not selected.

Breakwater—Port Arthur, Ont.—Dept. Pub. Wks., Parliament Bldgs., Ottawa, having plans prepared concrete and timber extension to breakwater, here. $250,000. K. M. Cameron, ch. engr.

Subway and Grade Separation—Toronto, Ont.—City, Canadian Natl. Ry., Union St., (A. F. Stewart, ch. engr.) and Canadian Pacific Ry., Windsor St., Montreal, Que., (J. M. Fairbairn, ch. engr.) plan concrete subways carrying to 6 tracks, 66 ft. wide, structural steel columns and decks, concrete abutments, piers, etc., on Canadian Natl. lines in western section of city, 2 on Bloor St., 2 on Royce Ave., 2 on St. Clair Ave., 1 on Junction Rd., and 1 on Davenport Rd., track elevation, grade separations and subways on Canadian Pacific lines at Dufferin St., Osler, Symmington, Lansdowne and Bartlett Aves. $5,000,000. R. C. Harris, city engr.

Power Development—Ulverton, Que.—Canada Paper Co. Ltd., 70 McGill St., Montreal, plans power development, here, incl. concrete dam and electric generator station. $500,000. Engineer's name withheld.

BIDS DESIRED

Bagging Garners, etc.—Brooklyn, N. Y.—July 18, by R. K. Fuller, comr. Canals & Waterways, Albany, furnishing and installing bagging garners, marine leg pushers and hoists, etc., in grain elevator, at Gowanas Bay, here, Contr. 81-C; adv. E. N.-R. June 26.

Plumbing System—Mt. Pleasant, N. Y.—July 7, at office F. L. Merritt, clk. Bd. Supervs. Westchester Co., Court House, White Pains, plumbing system in nurses home and employees dormitory, at Grasslands Hospital, here. Walker & Gillette, 128 East 37th St., New York City, archts.; adv. E. N.-R. June 26.

Heating and Plumbing—Oswego, N. Y.—July 18, by R. K. Fuller, comr. Canals & Waterways, Albany, heating system Contr. 82-H, and plumbing system Contr. 82-P, in Administration Building on terminal pier, here; adv. E. N.-R. June 26.

Dock, etc.—Waterford, N. Y.—July 18, by R. K. Fuller, comr. Canals & Waterways, Albany, dry dock and approach channel here; adv. E. N.-R. June 26.

Plumbing System—White Plains, N. Y.—June 30, at office F. L. Merritt, clk. Bd. Supervs. Westchester Co., Court House, White Plains, additional plumbing in County Jail; adv. E. N.-R. June 26.

Pier—New York, N. Y.—July 2, by J. H. Delaney, comr. Docks, Pier A, foot of Battery Pl., North River, building Pier 2, in North River, Contr. 1838.

Retaining Wall—Johnstown, Pa.—July 1, by City Council, 1,000 ft., rein.-con. retaining wall, 10 ft. high, along Stoneycreek River. $25,000. H. L. Wilson, city engr.

Levee—Memphis, Tenn.—July 8, by Mississippi River Comn., 1st and 2nd Dists., 1006 McCall Bldg., 5,315,000 cu.yd. earth work in Upper and Lower St. Francis, Reelfoot and White River Levee Dists.; adv. E. N.-R. June 26.

Concrete Mixers — Detroit, Mich. — T. Frank, 4430 Oleon St., in market for concrete mixers.

Tunnel—Seattle, Wash.—July 1, by Bd. Pub. Wks., completing 1st Ave., S., tunnel under Duwamish River. No bids in excess of $600,000 considered. Former bids rejected. J. D. Blackwell, city engr. Noted May 29.

Revetment Walls—Kincardine, Ont.—July 2, by N. Desjardins, acting secy. Dept. Pub. Wks., Ottawa, rebuilding West, South and East revetment walls, 660 ft., in inner harbor, also repairing wharf, here. $30,000.

BIDS RECEIVED

Fill — Plattsburgh, N. Y. — Plattsburgh Centenary Comn., filling in Thomas McDonough Monument, about 20,000 cu.yd., from T. J. Murtagh, Plattsburgh, $1.49 per cu.yd.

Heating and Ventilating Apparatus—St. George, N. Y.—Bd. Educ., 500 Park Ave., New York, heating and ventilating apparatus in addition to P. S. 16, Daniel Low Terrace, here, from Walker & Chambers, $57,565. Noted June 12.

CONTRACTS AWARDED

Elimination of Grade Crossings—Jamestown, N. Y. — Erie R.R., 50 Church St., eliminating grade crossings at Foote Ave., Main and Institute Sts., to A. McMullen Co., 50 Church St., New York City, about $500,000.

Ferryboats—New York, N. Y.—Dept. Plants & Structures, Municipal Bldg., 6 steel screw ferryboats, 3 to Staten Island Shipbuilding Co., Mariners Harbor, Staten Island, and 3 to Tebo Yacht Basin Corp., 25 Bway. This corrects report in June 5 issue.

Heating, etc.—Upper Darby, Pa.—See "Buildings."

Heating, etc. — Sarasota, Fla. — See "Buildings."

Subway—Cincinnati, O.—Rapid Transit Comrs., City Hall, about 5.3 mi. rapid transit line incl. 1,600 ft. subway, to Hickey Bros., 4200 Spring Grove Ave., $1,089,147. Engrs. est. $1,000,000. Noted June 12.

Stock Yards — Cudahy, Wis. — Cudahy Bros. Co., will build 700 ft. timber stock yard, by day labor. $100,000. W. A. Hayes, c/o owner, engr.

Frame Riding Device — Dallas, Tex. — Wortham Riding Device Co., Fair Park, frame riding device, to J. E. Pearce, P. O. Box 1481, $60,000.

Power Development—Copco, Calif.—California-Oregon Power Co., Klamath Falls, Ore., will take water from the foot of dam, here, and by 2 mi. tunnel turn it back into Klamath River, with 160 ft. drop, to develop 37,000 additional hp. by company forces. $4,000,000. P. B. McKee, ch. engr.

Street Lighting System—Los Angeles, Calif.—Street lighting system in Whittier Blvd., to Electric Lighting Supply Co., 214 West 3rd St., $71,908; Central Ave., to C. W. Sparks, Henne Bldg., $83,632; Santa Monica Blvd., to R. A. Wattson, 4907 Melrose Ave., $66,715. Noted June 19.

Seawall — California — See "Streets and Roads."

Power Lines—Ontario—Ontario Hydro Power Comn., Toronto, extending power lines from Erieau to High Banks, to Chatham Hydro Dept., under supervision of A. Jackson, Chatham, supt. $40,000 plus percentage basis.

Material and Equipment

PROPOSED WORK

Asphalt Road Oil—Brooklyn, N. Y.—E. Riegelmann, boro pres., Boro Hall, received no bids June 4, 75,000 gal. asphalt road oil.

Paving Materials—St. Paul, Minn.—H. W. Austin, city purch. agt., returned bids June 3 to makers for 1,795 sq.yd. 3 in. vertical fibre brick, 1,440 bbl. Portland cement, 284 tons asphalt, etc., for Hamline Ave., Arcade and East Sts. Work will be done by contract. Noted May 29.

Motor Equipment — Stockton, Calif. — Plans election to vote on $26,300 bonds for motor equipment for street department. W. B. Hogan, city engr.

BIDS DESIRED

Trucks—Long Island City, N. Y.—June 30, by M. E. Connolly, pres. Queens Boro, Queens Subway Bldg., motor trucks and equipment to Street Cleaning Dept. $150,000.

Tractor — Green Island (Troy P. O.), N. Y.—Bd. Village Trustees in market for one 5 ton tractor.

Inorganic Dust—New York, N. Y.—June 30, by J. Miller, pres. Manhattan Boro., Municipal Bldg., 3,000 tons inorganic dust.

Steam Shovel — Shawnee, O. — Ironclay Brick Co., 63 Ruggery Bldg., Columbus, taking bids 1 ton steam shovel for removing overburden and mining clay, at plant, here. J. M. Adams, pres.

Paving Blocks — Minneapolis, Minn. — July 1, by E. S. Gram, city purch. agt., 2,100 sq.yd. granite paving blocks. N. W. Elsberg, city engr.

Asphalt, etc. — Houston, Tex. — Taking bids 5,000 gal. asphalt and 1,200 cu.yd. shell. J. C. McVea, city engr.

Road Roller—Mineral Wells, Tex.—McClung Constr. Co., taking bids 10 ton road roller, steam or gasoline, also small air compressor.

Dump Cars, Concrete Mixers, etc.—Oakland, Calif.—Key System Transit Co., 22nd and Grove Sts., in market for dump cars, concrete mixers, etc. To exceed $25,000.

Road Roller and Truck—Riverside, Calif.—Riverside Co., W. L. Carlson, purch. agt., in market for 12 ton road roller and ½ ton truck, both gasoline motor driven.

Tractor—Santa Ana, Calif.—City in market for C. L. Best model L tractor. About $3,500.

CONTRACTS AWARDED

Asphalt Sand, etc.—Brooklyn, N. Y.—E. Riegelmann, boro pres., Boro Hall, 7,000 cu.yd. asphalt sand, to Z. Mahoney, 557 46th St., $9,520. Noted May 29.

Castings, Asphaltic Cement, etc.—New York, N. Y.—J. Miller, pres. Manhattan Boro. Municipal Bldg., steel castings to Erie Forge & Steel Co., 50 Church St., $4,455; 6,000 gal. asphaltic cement to Warner Quinlan Co., 79 Wall St., $28,650; 8,000 cu.yd. binder stone, to Calvin Tomkins Co., 30 Church St., $15,440. Noted June 19.

Trucks—Minneapolis, Minn.—Six 1 ton Ford trucks, to W. H. Kuhlmann & Co., 605 West Bway., $968 each; one Kissel truck, to O. M. Nelson Co., 1317 Harmon Pl., $2,990; two Graham Brothers Trucks, to H. E. Mack Co., 1229 Harmon Pl., $1,946 each, all for Garbage Dept. Noted May 29.

Paving Material—Minneapolis, Minn.—To Landers - Morrison - Christenson Co., 800 Builders Exch., 6,500 cu.yd. gravel or crushed rock at $1.90 per cu.yd., 3,600 cu.yd. concrete sand, $0.65. Noted June 5.

Road Oil—St. Paul, Minn.—To Minnesota Road Equipment Co., 4536 Dupont Ave., Minneapolis, 700,000 gal. road oil for Dept. Pub. Wks., at $0.0579 per gal., and 10,000 gal. for Dept. Parks, Playgrounds & Pub. Buildings, $0.063 per gal. Noted Apr. 7.

Pipe—Dallas, Tex.—To Amer. Cast Iron Pipe Co., Praetorian Bldg., for B. B. & S. c.i. pipe, 110 tons 16 in. 12 ft. at $59 per ton, 50 tons 4 in. 12 ft., $63.

Service and Lighting Equipment — Toronto, Ont. — Toronto Electric Comrs., Bd. Trade Bldg., will purchase and erect service and street lighting equipment by day labor. $680,000. Private plans.

SEARCHLIGHT SECTION

OFFICIAL PROPOSALS

Copy: Official Proposals reaching our New York Office by 10 A. M., Tuesday can usually be printed in the issue out Thursday.

Rate:
40 Cents a Line an Insertion

Plans and Specifications for inspection by distant bidders may be filed at any of the Engineering News-Record offices without charge.

THESE ARE OFFICIAL NOTICES THAT BIDS ARE WANTED FROM BIDDERS EVERYWHERE

E.N.-R.

OFFICIAL PROPOSALS

Bids: July 15.

Construction of National Park Boulevard

Woodbury, N. J.

Notice is hereby given that sealed bids will be received by the Board of Chosen Freeholders of the County of Gloucester for the construction of National Park Boulevard in the Borough of National Park and Township of West Deptford in the County of Gloucester with a concrete pavement; estimated amount of concrete pavement required is thirty-four thousand two hundred twenty-four (34,224) square yards, and opened and read in public at Court House, Woodbury, N. J., on Tuesday, July 15th, 1924, at 10.00 o'clock A.M., Eastern Standard Time.

Drawings, specifications and forms of bid, contract and bond for the proposed work, prepared by William C. Cattell, County Engineer, have been filed in the office of the said engineer at Merritt Building, Woodbury, N. J., and may be inspected by prospective bidders during business hours. Bidders will be furnished with a copy of the specifications and blue prints of the drawings by the engineer on proper notice and payment of cost of preparation. Bids must be made on the standard proposal forms in the manner designated therein and required by the specifications, must be enclosed in sealed envelopes, bearing the name and address of bidder and name of road on the outside, addressed to The Board of Chosen Freeholders of the County of Gloucester and must be accompanied by a certified check for not less than ten (10) per cent of the amount bid, provided said check shall not be less than $500.00 nor more than $20,000.00 and be delivered at the place and on the hour above named. The standard proposal forms is attached to the specifications, copies of which will be furnished on application to engineer.

By order of The Board of Chosen Freeholders of the County of Gloucester.

CHESTER N. STEELMAN,
Clerk.

WILLIAM C. CATTELL,
County Engineer.

Bids: July 10.

Sewer Connections

Dover, N. J.

The Board of Aldermen of the Town of Dover, N. J., will receive, at a meeting to be held on the 10th day of July, at 2 p.m., at the Council Chambers in the Municipal Building, North Sussex Street, Dover, N. J., sealed proposals for furnishing materials and doing all work required for the construction of 5 inch house connections.

Specifications and forms of proposals may be obtained at the office of the Clerk of the Town of Dover, Municipal Building.

Each bid must be accompanied by a certified check for not less than 10% of the amount of the bid, payable to the order of the Town of Dover.

The Mayor and Board of Aldermen of the Town of Dover reserve the right to reject any and all proposals and to waive any informality in the proposals received and to accept any proposal which they deem to be most favorable to the interests of the Town.

WILLIAM H. HOSKING,
Mayor.

JOSEPH V. BAKER,
Town Clerk.
Dated June 19, 1924.

OFFICIAL PROPOSALS

Bids: July 11.

Highway Work

DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS

Albany, N. Y.

Sealed proposals will be received by the undersigned at their office, No. 55 Lancaster Street, Albany, N. Y., at one o'clock p.m. advanced standard time which is twelve o'clock noon eastern standard time, on Friday, July 11, 1924, for the construction, completion and reconstruction of highways in the following counties:

CATTARAUGUS	(One highway:	3.87)
CAYUGA	(One contract:	4.78)
CHAUTAUQUA	(One highway:	3.87)
CHENANGO	(One highway:	4.86)
COLUMBIA	(One highway:	4.25)
DUTCHESS	(One contract:	2.82)
ERIE	(One contract:	3.94)
GENESEE	(One contract:	2.80)
GREENE	(One contract:	0.93)
LEWIS	(One contract:	0.77)
MADISON	(One contract:	5.87)
MONROE	(One highway:	0.85)
MONTGOMERY	Completion...(One highway:	3.00)
ONEIDA	(One contract:	3.86)
ORANGE	(One contract:	2.53)
ST. LAWRENCE	Completion..(One highway:	10.14)
SARATOGA	(One highway:	6.44)
SENECA	(Two contracts:	4.78 & 2.14 and One highway: 6.23)
SUFFOLK	(One contract:	3.02 and One highway: 9.39)

Maps, plans, specifications and estimates may be seen and proposal forms obtained at the office of the Bureau in Albany, N. Y., and also at the office of the division engineers in whose division the roads are located which are to be constructed, completed and reconstructed. The addresses of the division engineers and the counties in which they are in charge will be furnished upon request.

The especial attention of bidders is called to "General Information for Bidders" in the itemized proposal, specifications and contract agreement.

A. W. BRANDT,
Commissioner of Highways.

Bids: July 8.

Street Improvement

Jackson, Tenn.

Sealed proposals will be received by the undersigned until 10 o'clock A.M., on Tuesday, July 8th, 1924, for the improvement of certain streets in the City of Jackson, Tenn., in accordance with plans, profiles, and specifications prepared and on file in the office of the City Commissioners, approximating 102,600 square yards of pavement, 42,800 lineal feet of concrete curb and gutter, 3,500 lineal feet of storm sewers with necessary inlets and manholes. Bids are requested on sheet asphalt on concrete base, 3 inch vertical fiber brick, on concrete base, 6 inch one course concrete pavement. Bids on other types may be submitted also. Each bid must be accompanied by a certified check or bidder's bond in the amount of ten per cent of the cost of the entire work, computed on the basis of the bids submitted. The right is reserved to reject any or all bids. At 10 o'clock A.M. on said date all bids will be opened and publicly read. A deposit of $5.00 is required for each set of specifications, returnable when bid is submitted, or upon return of specifications.

C. E. GRIFFIN,
Com'r. of Public Utilities.
E. R. DIKE,
City Engineer.

OFFICIAL PROPOSALS

Bids: July 23.

Bridges

Miami, Fla.

Sealed Proposals will be received until 12:00 noon, Wednesday, July 23, 1924, at the office of The Bay Biscayne Improvement Company, 105-107 Northeast Second Avenue, Miami, Florida, for the construction of twelve Reinforced Concrete Bridges and two double-leaf Bascule type Steel Draw Bridges, with a total length of 4,236 feet, across Biscayne Bay between the cities of Miami and Miami Beach, Dade County, Florida, and known as "The Venetian Way."

Plans and Specifications may be seen at the office of the Engineering News-Record, after June 30th, or obtained from the Engineer for the sum of $25.00, $15.00 of which will be refunded upon the return of the plans in good condition.

Bids may be submitted upon one or more of the structures, or upon the Concrete or Steel portions of the Bridges with Draw openings, or upon the entire work.

Payments will be made in cash, on the tenth of each month, for eighty per cent of the value of the work done during the preceding calendar month, upon certificates of the Engineer.

All bids must be accompanied by a certified check or bidder's bond, made payable to the Bay Biscayne Improvement Co., for an amount equal to two (2%) per cent of the total amount of bid.

The Bay Biscayne Improvement Company reserves the right to reject any and all bids, to accept any part of any bid, waive all formalities, or to accept the bid which it deems the most favorable to the Company.

The Bay Biscayne Improvement Company.
By F. C. B. LE GRO,
Vice President.

HARVEY STANLEY,
Consulting Engineer,
Fort Lauderdale, Florida.
Dated June 14, 1924.

Bids: July 7.

Garbage Incinerators and Chimney

Ambridge, Pa.
May 26, 1924.

Sealed proposals for the construction of Garbage Incinerators and Chimney will be received at the office of the Borough Manager of the Borough of Ambridge, Penna., until 6:30 p.m., July 7th, 1924 (Eastern Standard Time).

The plant is to consist of two units each having a capacity of ten (10) tons of garbage and rubbish per eight hours. Bidder is to submit plans, specifications, and guarantees of the incinerators and chimney which he proposes to install, which is to be in accordance with general specifications prepared by the Borough of Ambridge.

A copy of the specifications may be obtained at the office of the Borough Manager.

Each bid must be accompanied by a certified check, made payable to the Treasurer of the Borough of Ambridge, in the amount of Five Hundred ($500.00) Dollars.

The Borough of Ambridge reserves the right to reject any or all bids.

Borough of Ambridge.
By A. W. JOHNS,
Borough Manager.

Volume 92 New York, June 26, 1924 Number 26

Engineering News-Record

A CONSOLIDATION OF ENGINEERING NEWS, ENGINEERING RECORD, AND THE CONTRACTOR

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More Historical Sketches of Construction Machinery

IN the issue following *Engineering News-Record's* Fiftieth Anniversary Number of April 17 there appeared the first of a series of articles on "Construction Equipment—Past and Present." The initial subject dealt with was the rock drill and succeeding articles presented historical sketches of the power shovel, the concrete mixer, the hoisting engine and engineering and surveying instruments.

IT has been decided to carry this series of historical articles into additional fields which, according to present plans, will include the road grader, the clamshell and orangepeel buckets, the trench excavator, the belt conveyor, the bucket loader, and other standard forms of contractors' equipment.

IN an early issue of this journal the historical series will be resumed with some facts about a widely-used engineering tool—**The Road Grader.** This machine dates back to the seventies when Samuel Pennock designed and patented the first grader. Subsequent improvements have included the reversible feature common to all modern graders, 12-ft. instead of 7- or 8-ft. blades, offset hitches, sliding frames, leaning wheels, back-sloper attachments, elevating machinery for handling the excavated earth, and strengthened parts for tractor instead of team haulage.

EVERY contractor and every engineer will find it worth while to know something about the origin and development of the equipment he uses. To-day's standard improved types present an instructive contrast to the primitive forms of machine used by previous generations of constructors.

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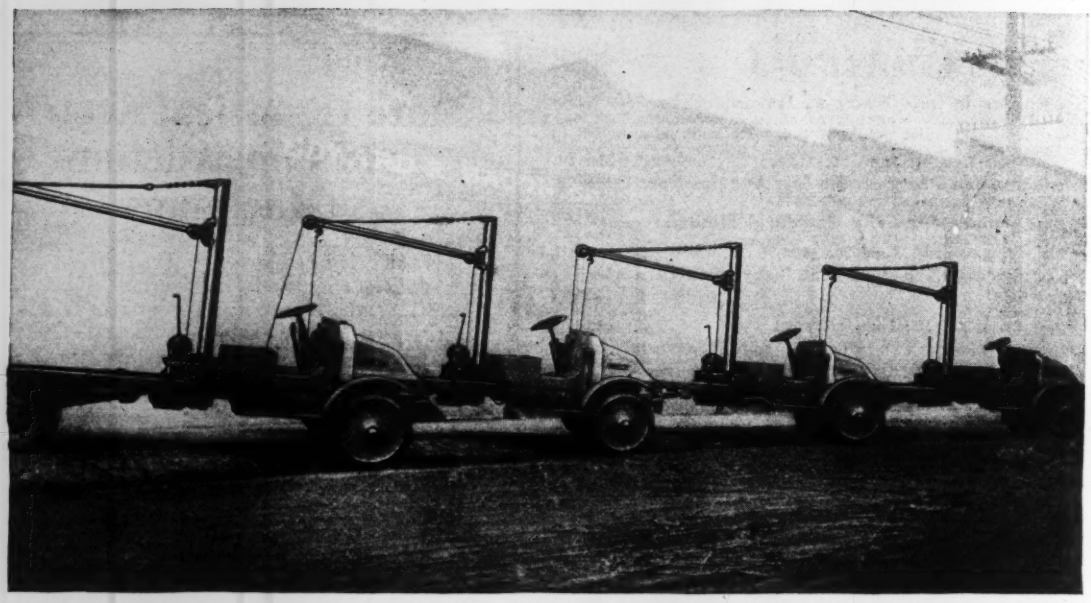

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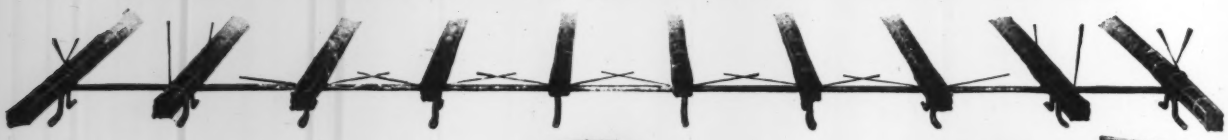

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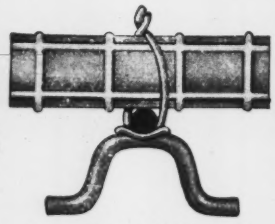
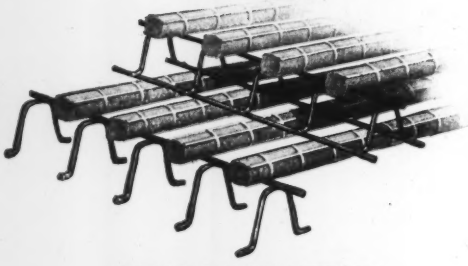


SLAB SPACERS



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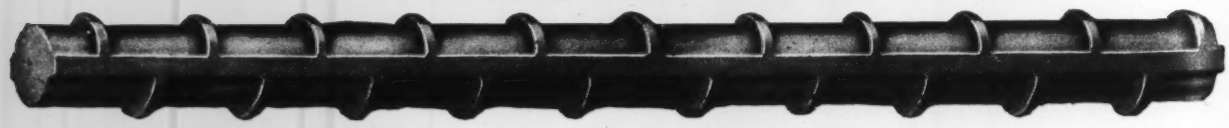

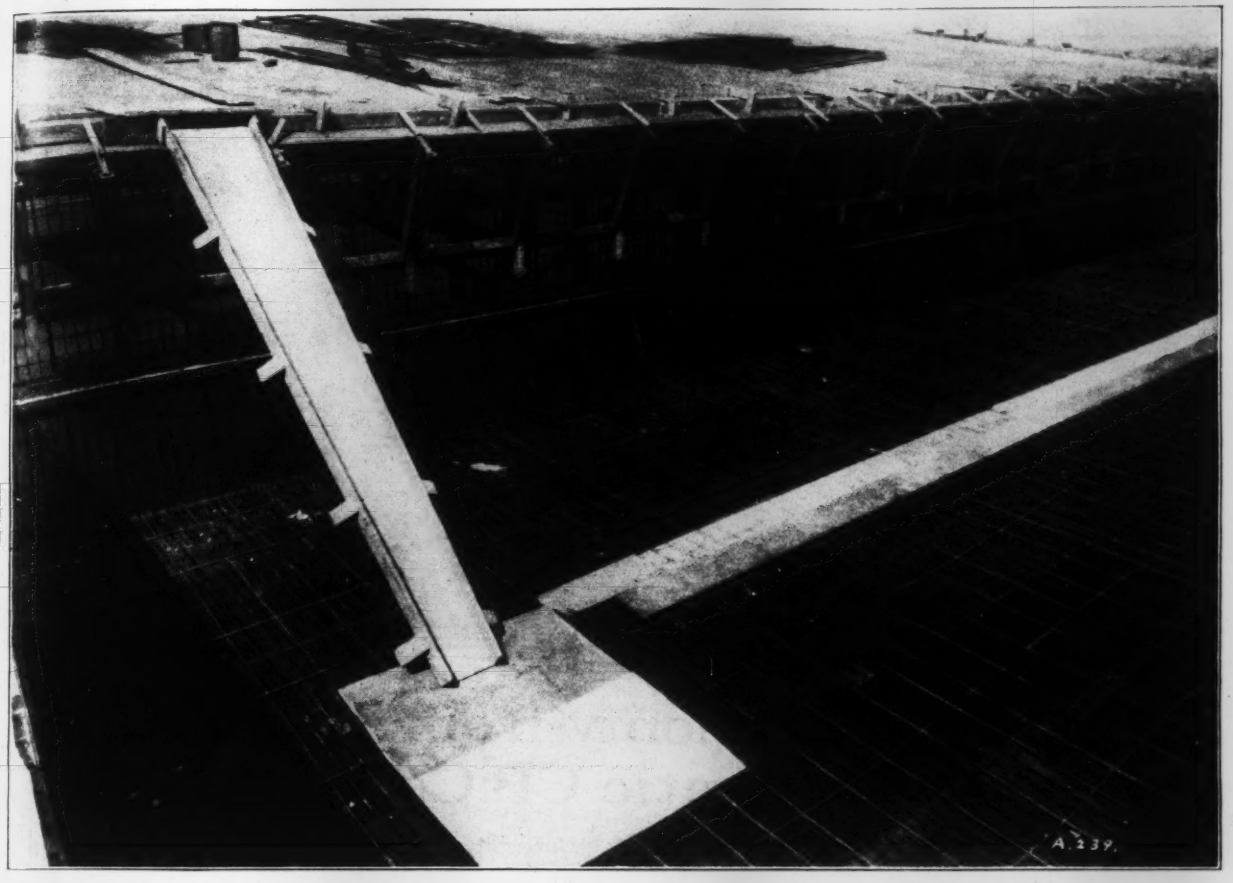

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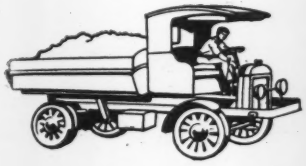
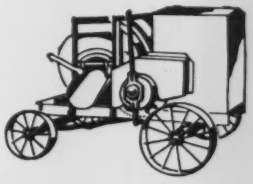


If your truck drivers had to shift gears 15 or 20 times a minute—

If your concrete mixer operator had to throw clutches 15 or 20 times a minute—

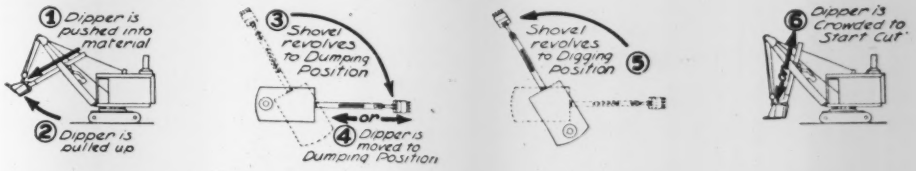


What kind of power would you use?

The answer to this question is easy. You would use steam power, to speed up your work by getting flexibility, and ease of operation, through direct throttle control of each operation.

There are some contractors who think that the same satisfaction can be secured from gasoline power when used on a power shovel, as they get from gas drive on a truck or concrete mixer—overlooking the entirely different problem of shovel work.

Here is a sketch which gives a clear idea of the problem:


1 Dipper is pushed into material
2 Dipper is pulled up
3 Shovel revolves to Dumping Position
OR
4 Dipper is moved to Dumping Position
Shovel revolves to Digging Position 5
6 Dipper is Crowded to Start Cut

EVERY TIME the shovel's dipper picks up and dumps a load of material, there are six or more *separate applications of power in different directions.* (More than six, when it is hard digging and the dipper must make two or more bites in order to fill).

Yet when independent sets of steam engines are used for the hoisting, crowding and swinging— the shovel can perform this complete digging cycle smoothly and easily *in* 10 *to* 20 *seconds.*

That's why you hear of so many contractors getting 600 to 700 cubic yards a day, or even more, from steam ERIES digging in a fairly high bank with plenty of cars or trucks to haul the material away.

Up to the present date, there is no other type of power which can even approach steam for general shovel work. The *flexibility* of steam is of the greatest importance for taking loads which are continually jumping from zero to 150% overload or more. The cushion effect of the steam is a valuable factor in protecting the machine which is facing these conditions.

The ERIE'S ease of operation, and *reliability*, far more than offset any minor convenience of feeding the shovel gasoline instead of coal and water. Its extra output — greater earning power — makes any possible fuel saving triflingly small by comparison. Don't "Save at the Bung and Waste at the Spigot."

Unless you are working in an arid section where water is almost impossible to get— or working where gasoline costs almost nothing, and coal or fuel oil are extremely high — or are digging easy material with only intermittent requirements—

A steam ERIE is the machine to use. It will give you *output.* In June, 1924, there is nothing else that will tackle real digging like a steam ERIE does.

That is the reason why contractors are buying far more steam ERIES than any other ¾-yd. excavating machine —

And also, that's why it pays to get definite figures on outputs which have been regularly obtained, before you buy excavating plant for any job.

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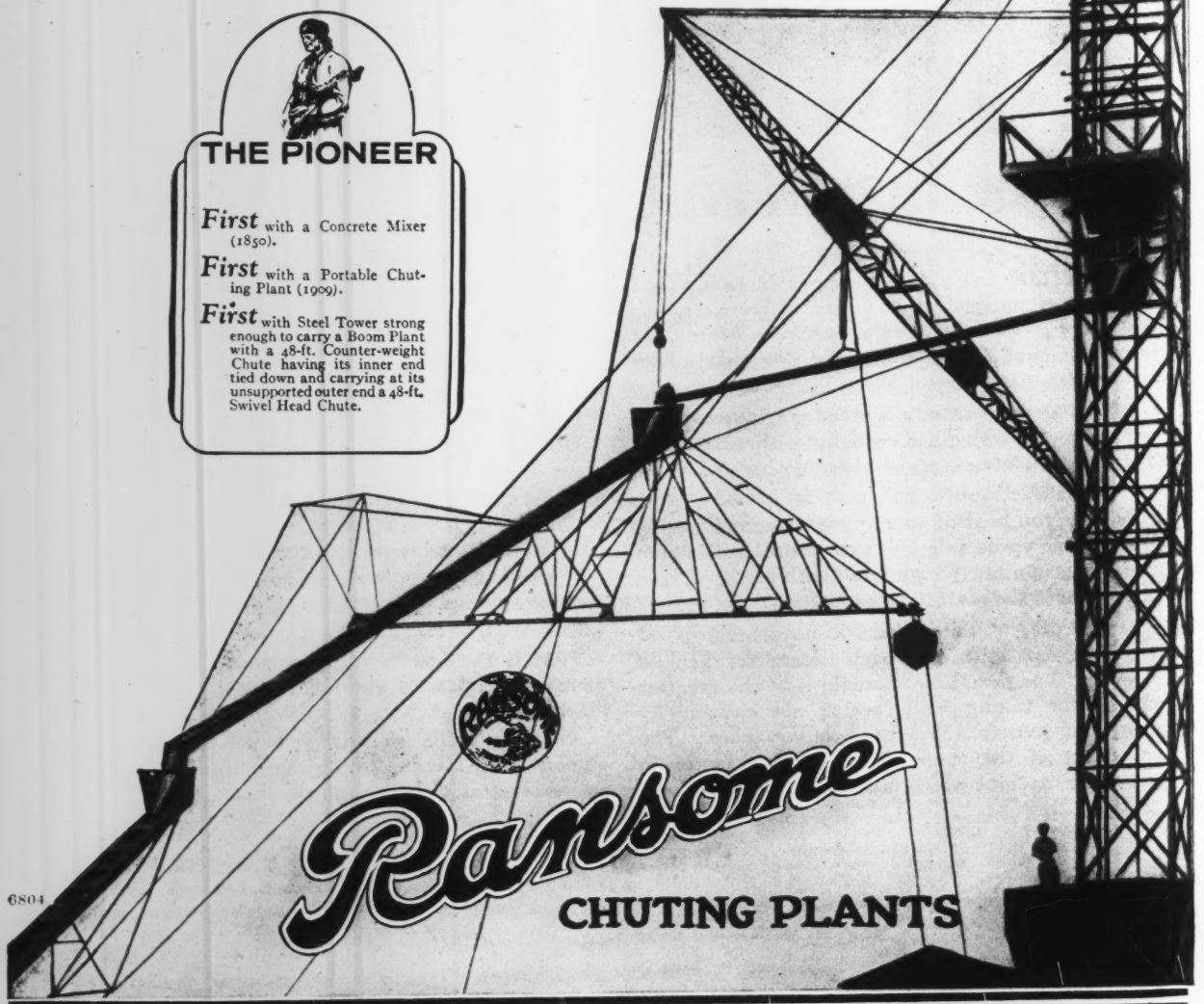
RANSOME CONCRETE MACHINERY CO.
1750 Second Street, Dunellen, N. J.
Manufacturers of Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoist Buckets, Bins, Cars, Carts, etc.

THE PIONEER

First with a Concrete Mixer (1850).

First with a Portable Chuting Plant (1909).

First with Steel Tower strong enough to carry a Boom Plant with a 48-ft. Counter-weight Chute having its inner end tied down and carrying at its unsupported outer end a 48-ft. Swivel Head Chute.



Ransome

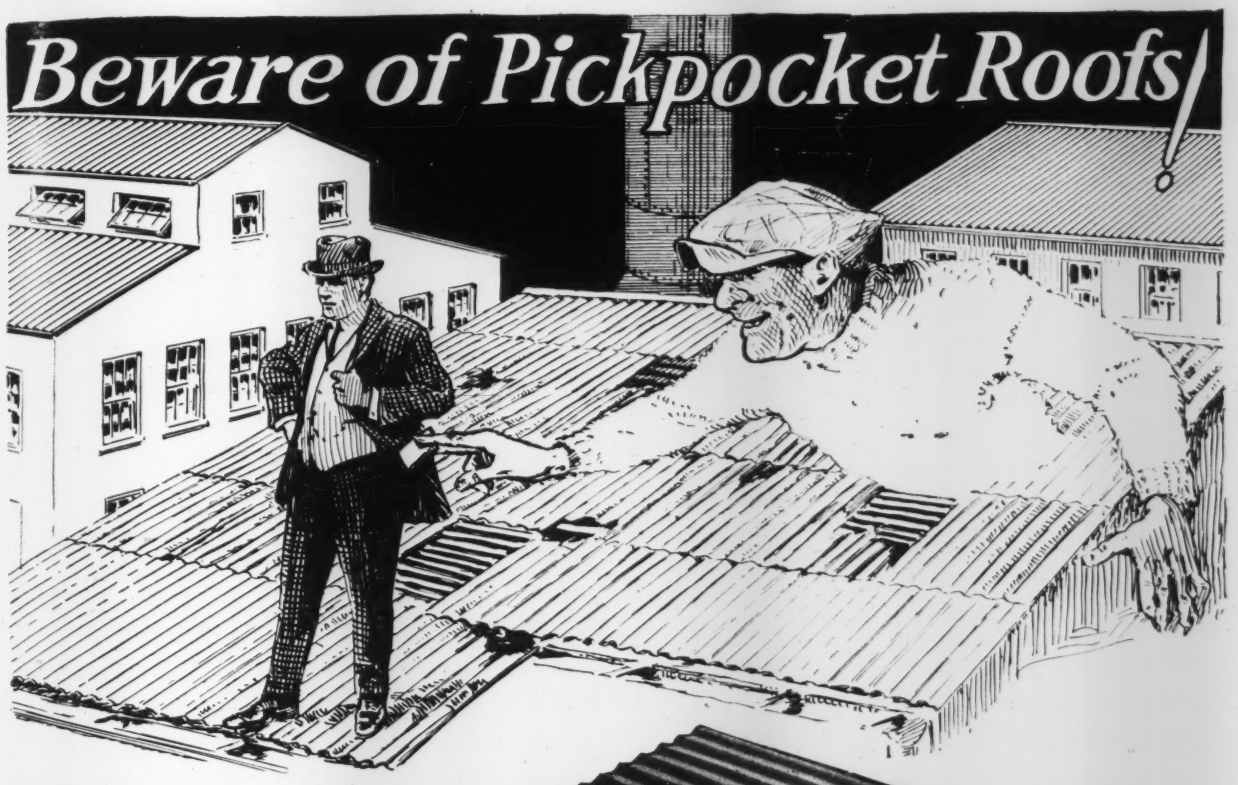
CHUTING PLANTS

6804

Without obligation on my part, please send me information on:—
Building Mixers, sizes 4-S___; 7-S___; 10-S___; 14-S___; 21-S___; 28-S___; 56-S___. Driven by Belt___, Steam___, Gasoline___, Electric___.
Paving Mixers, sizes 7-E___; 10-E___; 14-E___; 21-E___. Concrete Chuting Plant for structure___ ft. long by___ ft. wide by___ ft. high.

NAME _____ *ADDRESS* _____

Beware of Pickpocket Roofs!



ROOFS that rust and crumble away, ***rob you*** of your hard-earned money—just like burglars!

The more you paint and patch them up,—the more they ***steal away from you!***

"ASBESTONE" roofing and siding ***stops such leaks permanently!***

Made entirely of imperishable substances—***Portland cement and asbestos fibre,***—proof against FIRE, RUST, WATER, HUMIDITY, SALT AIR, CLIMATIC OR ATMOSPHERIC CONDITIONS, INDUSTRIAL FUMES, ACID, etc.

It is a ***real protection*** for your buildings.

No Painting—No Maintenance—No Repairs! Absolutely Permanent!

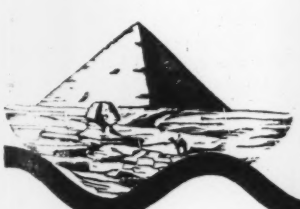
Easily and economically applied on skeleton frame construction—no sheathing necessary.

Write us for our new Bulletin No. 21-R with full description and all engineering data.

Manufactured by

R. J. DORN CO., Inc.
New Orleans, La.

General Sales Office:
82 Wall Street, New York



"ASBESTONE"

"Enduring as the Pyramids"

End section of arch, New Water Supply at Washington, D.C. This job consists of nine miles of horse-shoe shaped cross sections of reinforced Concrete. It has a large number of sharp and difficult curves. The work is being done by the Arundel Corporation under the supervision of L. H. Beach, Maj. Gen. and Chief of Engrs. U. S. War Dept.; J. A. O'Connor, Maj. Corps of Engrs. U. S. A.; and E. D. Hardy, Asst. Engr. U. S. Engr. Office.

Another Example of Quality Control in the Field

Government engineers, too, are applying laboratory principles to control the quality of Concrete.

On the New Water Supply Conduit at Washington, D. C., they are carefully grading the aggregates. They keep constant check on the water content. They maintain a minimum time for mixing.

The strength assumed for the Concrete was 2000 pounds. The minimum strength maintained day after day—as shown by hundreds of tests made by the U. S. Bureau of Standards—is 2500 pounds.

Have you seen previous advertisements of this series, telling about some of the many other jobs where modern field methods of control are directly helping to assure Concrete of uniformly greater strength? Proofs of these advertisements will be sent you on request. Address the nearest office listed below.

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Dallas	Indianapolis	Milwaukee	Parkersburg	San Francisco
Birmingham	Denver	Jacksonville	Minneapolis	Philadelphia	Seattle
Boston	Des Moines	Kansas City	New Orleans	Pittsburgh	St. Louis
Charlotte, N.C.	Detroit	Los Angeles	New York	Portland, Oreg.	Vancouver, B. C.
Chicago	Helena	Memphis	Oklahoma City	Salt Lake City	Washington, D.C.

ONE HUNDRED YEARS 1824 1924 OF PORTLAND CEMENT

Our Booklets are sent free only in the United States, Canada and Cuba

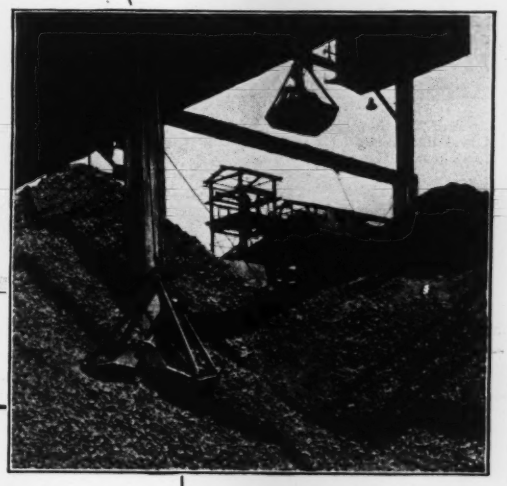
14 years ago, Back in 1910

When Princeton's President became Governor of New Jersey

These 2 Veteran WILLIAMS Buckets went on duty at Providence

Two more "Honor Roll Veteran" WILLIAMS Buckets

In all these years, the two WILLIAMS "Standard" Buckets that went to the Providence Gas Company back in 1910, have been giving the same satisfactory service.



For 14 years these two "veterans" have been handling coke, often frozen. Working today just as they did when new — and "the cost of upkeep has been unusually low with both buckets," write the owners.

Because of the splendid record made by these two veterans, the Providence Gas Company now uses 8 WILLIAMS Buckets all told.

You Will Get the Same Good Results with WILLIAMS Buckets

There is no need to "take a chance" when buying a bucket. Use the WILLIAMS, and you are sure of dependable service year after year.

Every WILLIAMS Bucket carries this unique guarantee: "*All parts guaranteed against breakage, as long as the bucket is used on the kinds of work we recommend it for.*"

The "Standard" gives good results on any equipment with two drums for bucket operation, such as guy and stiff leg derricks, locomotive cranes and overhead cranes.

It operates with three parts of closing line, and the short cable overhaul speeds up opening and closing. The leverage of the WILLIAMS Power Arm gives plenty of closing power for a quick bite into coal, gravel, etc.

No material is spilled between the lips, as the large one-piece hinge bearing holds the scoops in perfect line, even after years of service.

The "Standard" carries the regular Williams guarantee.

There's a WILLIAMS Designed to Handle Your Work

Probably one of the 12 regular types of WILLIAMS Buckets will give the results you want. Sold with a definite guarantee to do your work.

Write for interesting photos, which show the results being obtained by the use of WILLIAMS Buckets. Tell us your particular requirements.

G. H. WILLIAMS COMPANY, 601 Haybarger Lane, Erie, Pa.

WILLIAMS

QUICK-ACTING CLAMSHELLS

All Parts Guaranteed Against Breakage

Dependable service, with low upkeep cost, because of these construction features:

All steel — no cast iron sheaves or other iron parts.
All moving parts are bronze bushed — and easy to get at.
Sheaves turn on oversized pins, extra large diameter, and are held in perfect alignment by the triangular arrangement of the corner bars.
Practically no wear at the hinge pin — since the outer shell lugs are pinned to the main shaft, instead of turning on it.
Roller rope guards, used as line guides at the head of the bucket, prevent fraying of the cable.
All sheaves are in line, on every WILLIAMS — no "side leads" to cause rapid wear of cable.

Nurses Home for St. Joseph's Hospital, Omaha, Nebraska
T. M. Nachligall, Architect. Anton Kettler Construction Co., General Contractor.
Gate City Erection & Supply Co., Contractors for Metal Lath.

Havemeyer Service exclusively

This is a complete Havemeyer Job. It includes

—120 tons of Havemeyer Bars—double easle chairs; barstys; beam saddles; securo slab spacers.
—40,000 sq. ft. removable steel forms.
—40,000 sq. ft. triangle mesh.
—15,000 sq. yds. metal lath.
—all channels, corner beads, picture mould.
—security anchors; wall tys.
—sanitread for all stairs.
—some 7000 sq. yds. of 2 in. solid plaster partitions, using Havemeyer diamond mesh lath and channels.

All Havemeyer Products, all delivered on the job on time.

A splendid example of the use of Havemeyer Service and Havemeyer Products.

HAVEMEYER BARS
Rolled Exclusively From
NEW BILLET STEEL

Concrete Steel Company

42 Broadway, New York City, N. Y.

Sales Offices and Warehouses in Principal Cities

PARSONS

THE BEST TRENCH EXCAVATOR

A Super Trencher

Six years ahead of its time

Until you have seen a Parsons Model 40, you cannot appreciate just what a difference there is in the trench excavator of today and the machine of tomorrow—*the Model 40.*

It is newly designed throughout and capable of setting new digging standards on 40 inch, 15 foot trench. Write for detailed information.

THE PARSONS COMPANY
NEWTON, IOWA, U. S. A.

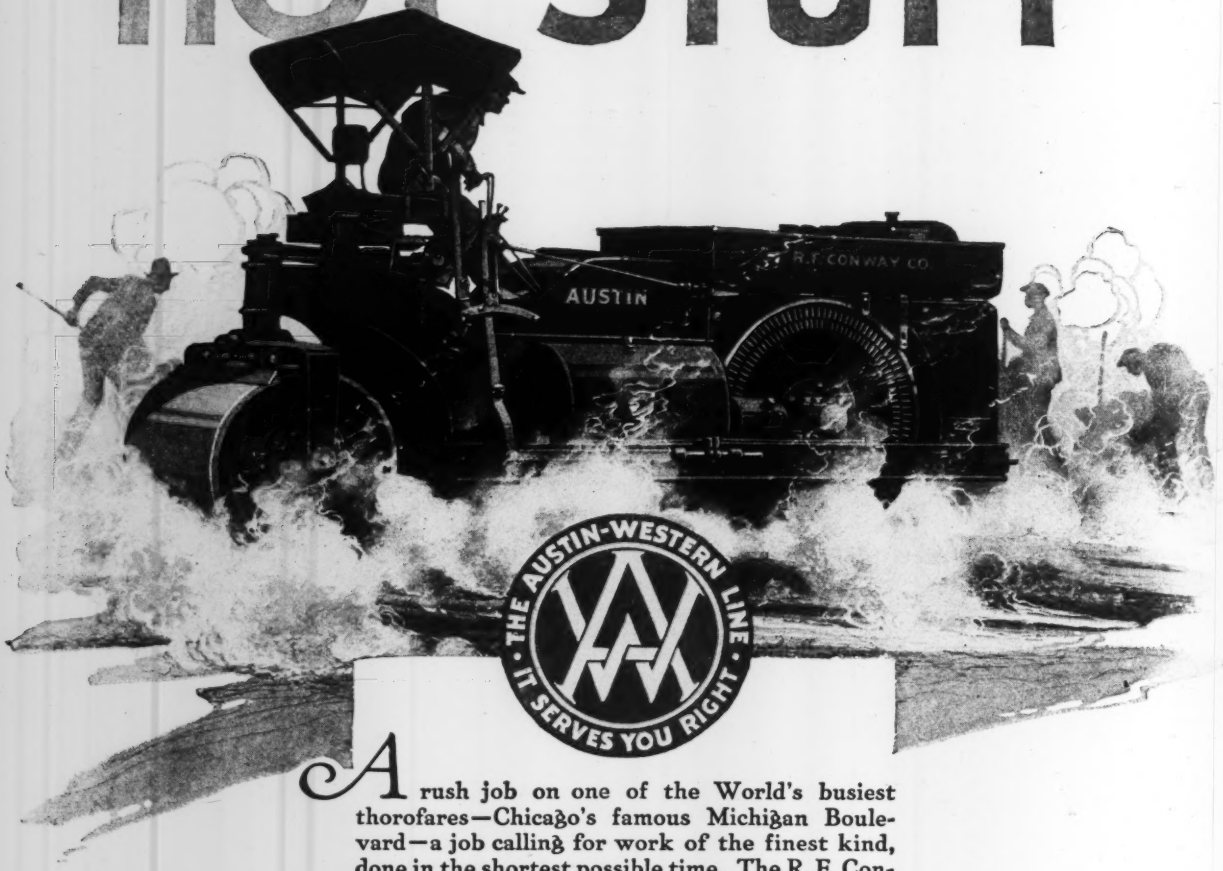
Chicago, 11 S. La Salle St. Kansas City, 1737 Walnut St. New York, 145 Centre St.

Agents in All Principal Cities

MUSSEN'S LIMITED, SOLE DISTRIBUTORS IN CANADA—Montreal, Toronto, Winnipeg, Vancouver

PICK A PARSONS *and* QUIT PICKING

"HOT STUFF"



A rush job on one of the World's busiest thorofares—Chicago's famous Michigan Boulevard—a job calling for work of the finest kind, done in the shortest possible time. The R. F. Conway Company landed it, and this Austin Motor Tandem Roller of theirs played no small part in completing it on schedule.

"Hot stuff" puts a tandem roller to the severest test, and that is where the motor driven Austin shines the brightest in comparison with those of the steam driven type. Check over a few of the features that have made Austins such lasting sources of satisfaction and profit to the Conway Company and many others among our more exacting paving contractors, and the answer is plain: No time lost getting up steam and taking on coal and water; no falling coals to injure the pavement; steadier running because of the low center of gravity; and easier steering and handling.

WHY TAKE LESS IN A TANDEM?

THE AUSTIN-WESTERN ROAD MACHINERY CO.

CHICAGO

Production that Spells Profits!

The true gauge of the worth of any Gyratory Crusher is its ability to PRODUCE!—day in and day out, year in and year out; with a minimum of lost time, and with low operating and maintenance charges. That sort of production spells PROFITS for you, and it is the sort that Austin Gyratories are providing for thousands of owners.

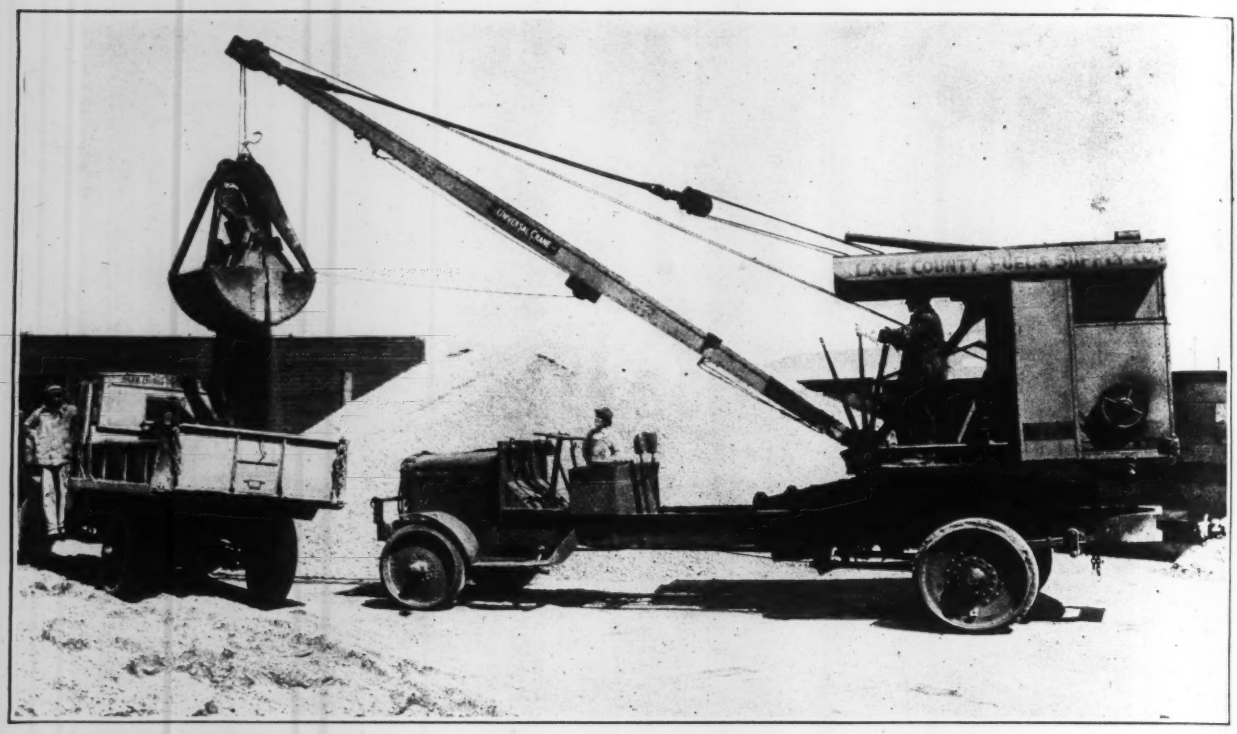
Embodying the best thought of many years of experience; made in stationary and portable types, and several sizes; and served by equally reliable Austin elevators, screens, bins, cars and hoists—they simplify your selection by offering a plant as good as made to order for you.

Special catalogs and bulletins describe the various types in detail. Tell us your needs, and we will send you full information.

AUSTIN MANUFACTURING CO.

CHICAGO NEW YORK

Speed—Mobility—Power—Strength



The Crane that has Them All!

All that you want in a crane, Universal provides,

Speed to finish the job in a hurry and at a profit.

Mobility for moving the unit to the next job quickly with the least wasted time.

Power to meet unusual demands and earn profits impossible with less of it.

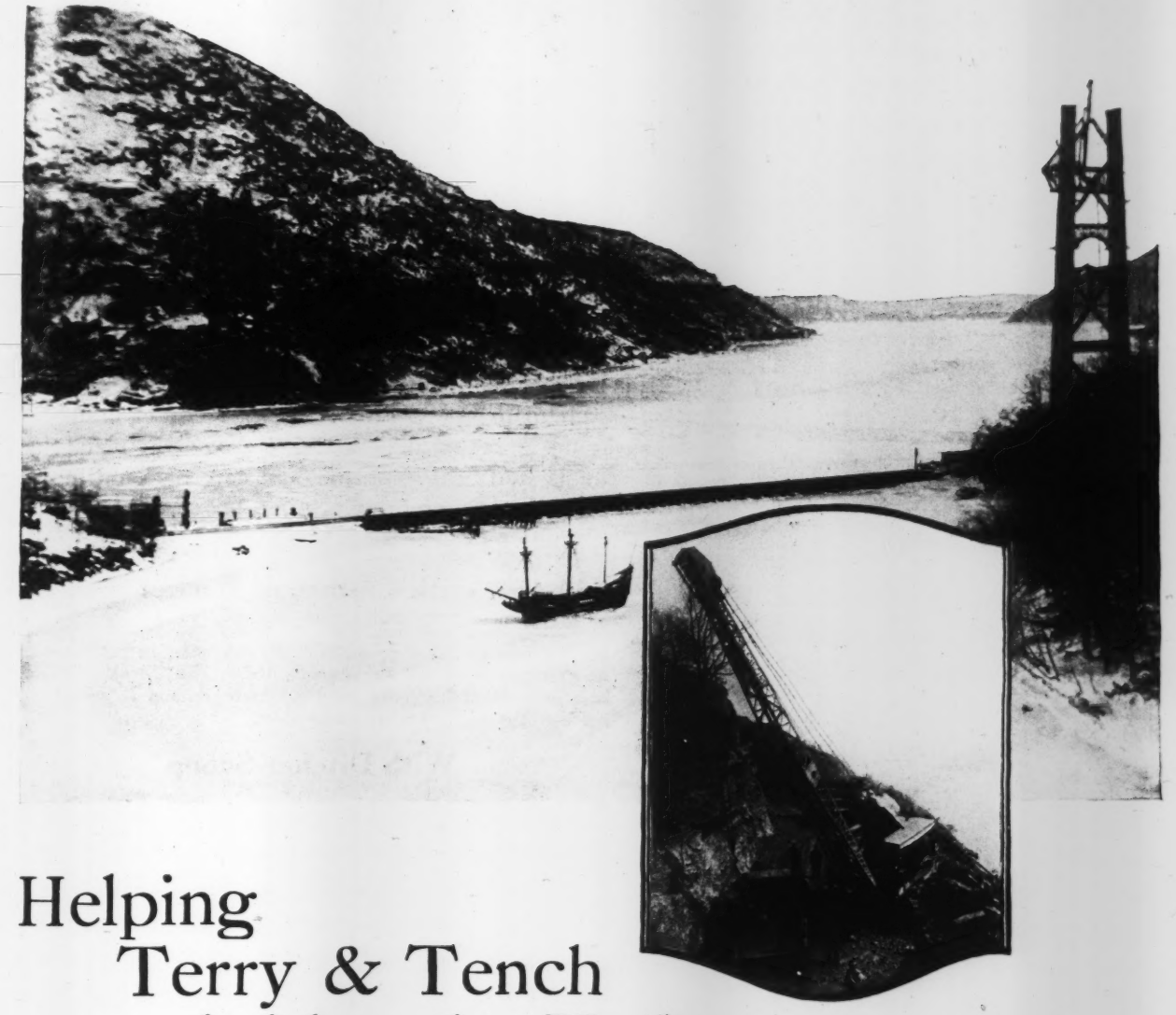
Strength for endurance, giving ability to run day and night, week after week, without delays, if the job demands it and to keep giving economical service for years to come.

It is because Universal gives you all these in abundance that owners stick to Universals and *One out of every four sales is a repeat order.*

It will pay you to get complete details about this crane.

Wire or write for Bulletin No. 226

The Universal Crane Co., 1144 Swetland Bldg., Cleveland, Ohio



Helping Terry & Tench bridge the Hudson

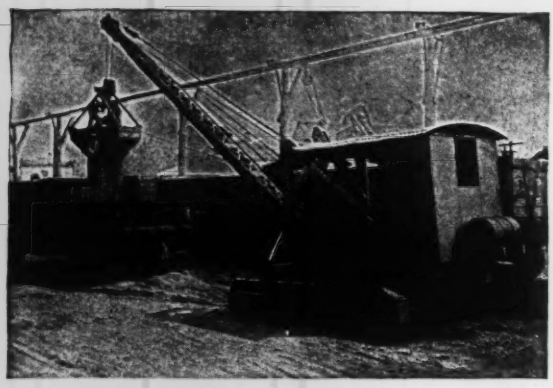
WORKING in the shadow of Anthony's Nose, a Northwest Convertible Crane is helping Terry and Tench to bridge the historic Hudson. Here on fabled ground, beneath the site of old Fort Clinton and above the little replica of Hendrick Hudson's Half Moon the "Last Word" in gasoline crawler cranes is helping to reduce construction costs for Terry and Tench.

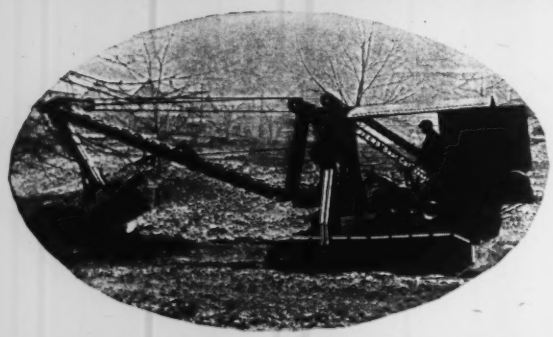
NORTHWEST ENGINEERING CO.
827 STEGER BLDG., CHICAGO

NORTHWEST
GAS or CONVERTIBLE ELECTRIC
CRANES · SHOVELS · DRAGLINES

E. N.-R. 6-26S-RTG

BYERS





Three machines in one, a material handler, a ditcher, a grader and excavator—and a "Bear Cat" at all three jobs.

The "Bear Cat"

The reports that are coming in from the owners of Byers "Bear Cat" Cranes are almost too extravagant to print. Matched against bigger cranes of much greater rated capacity, the "Bear Cat," due to its swiftness, mobility and ease of handling, is actually doing more work in some cases, and doing it much more economically.

With Clamshell Bucket

Handling loose materials of all kinds with a ½-yard clamshell bucket, two or three round trips of the boom per minute can be expected from an average operator. The "Bear Cat" can also do ordinary digging with a clamshell, and is being used successfully on such work right along.

With Ditcher Scoop

At sewer and trench work the "Bear Cat" with ditching attachment is a whirlwind. The full caterpillar mounting gives the traction and mobility necessary and the work moves along with a speed and steadiness that can only be appreciated in the actual seeing. This attachment is offered in two widths, 18 and 24 inch, and operates to a depth of 15 feet.

With Shovel Attachment

The "Bear Cat" is a very efficient grading tool with the Byers-Fogarty shovel attachment or skimmer scoop. On tough, extensive jobs of road grading it has proved entirely satisfactory, and more and more buyers are ordering this attachment now along with one or both of the others.

With these interchangeable attachments, the owner of a "Bear Cat" has virtually three machines in one, earning money all the year around.

Don't lose out on this summer's business. Let us send you more information.

THE BYERS MACHINE COMPANY
250 Sycamore St., Ravenna, Ohio

CRANES

Forty years of well-kept Shovel Records

TWO views of the first tracing ever made of a Marion Shovel, "Number 2," designed, built and sold at Marion, Ohio, in 1884. The inset is an assembly drawing of the old-time dipper with which the Marion of 40 years ago was equipped. Today this historic sheaf of tracing paper reposes in the fire-proof Record Vault along with the blue prints of more than 5000 other Marions working in all parts of the world.

A recent blue print of a Marion Shovel. The minutest details of construction are covered in the working drawings of today.

Before shipment every Marion is checked with the blue print working drawings to assure an accurate and complete record of each machine.

The Marion Steam Shovel Company · Marion, Ohio, U.S.A.

1884 FORTIETH ANNIVERSARY *1924*

Marion Power Shovels

2486

BETTER CONCRETE *for* LESS COST

1—Doolittle-Russell, Ltd., Hamilton, Ont.
2—Byllesby Eng. Co. Minneapolis, Minn.
3—Utility Const. Co. New Brunswick, N. J.
4—Otis Cement Const. Co., Detroit, Mich.,
5—State of Ohio, Wooster, Ohio.
6—Pyramid Const. Co., Harrisburg, Pa.

The Blaw-Knox Batcherplant saves TIME, LABOR and CEMENT — ask the contractor who owns one or more — who measures every mix ***accurately*** in 5 seconds, and ***in an instant*** loads his trucks, batch cars or mixer with a

BLAW-KNOX (One-Man) BATCHERPLANT

Road Builders and General Contractors everywhere are saving money and increasing profits. Every batch is automatically and ***accurately*** measured — mechanical proportioning prevents any variation of the mix. In every state — in most countries there's a Batcherplant. Inspect the outfit, we will give you the exact location.

Blaw-Knox Road Building Equipment

Road Forms
Universal Forms
Truck Turntables
Batcherplants
Handy Houses
Clamshell Buckets
Cement Handling and Loading System

BLAW-KNOX COMPANY
601 Farmers Bank Building, Pittsburgh, Pa.

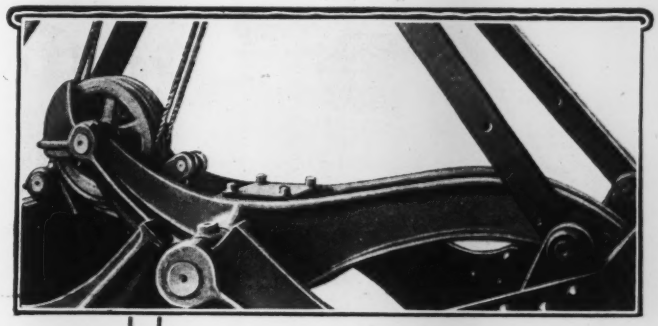
NEW YORK 30 E. 42nd St. | BALTIMORE Bayard & Warner Sts. | BIRMINGHAM Am. Trust Bldg.
CHICAGO Peoples Gas Bldg. | DETROIT Lincoln Bldg. | BUFFALO Genesee Bldg.
LONDON, ENG. Caxton House

BLAW-KNOX

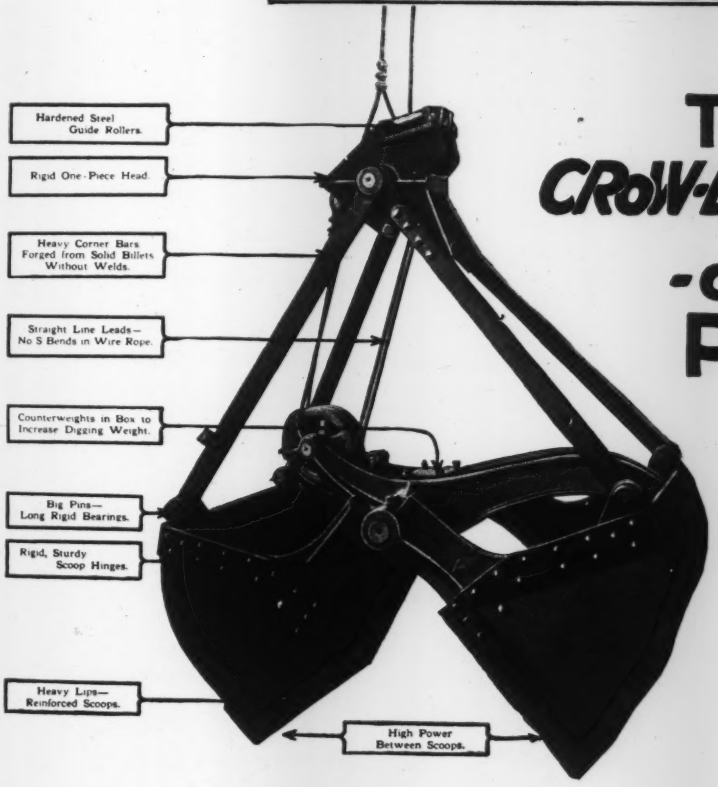
BLAW-KNOX Batcherplants

HIGH POWER *and* BIG OUTPUT

Any Crane Will Do Its Best Day's Work When Equipped with a Blaw-Knox DREADNAUGHT



The Dreadnaught Lever Arm is riveted to the bucket scoop—resting (but not turning) upon the hinge pin, with the closing sheaves mounted on the *extreme end* of the arm—giving tremendous closing power with only four-part reeving.


Hardened Steel Guide Rollers.
Rigid One-Piece Head.
Heavy Corner Bars Forged from Solid Billets Without Welds.
Straight Line Leads—No S Bends in Wire Rope.
Counterweights in Box to Increase Digging Weight.
Big Pins—Long Rigid Bearings.
Rigid, Sturdy Scoop Hinges.
Heavy Lips—Reinforced Scoops.
High Power Between Scoops.

The Lever Arm *CROW-BARS* the Scoops -a Heaping, Paying Load at every grab

Write for a copy of Catalog No. 24, on Clamshell Buckets

PRODUCTS

Steel Forms
Road Building Equipment
Standard Buildings
Transmission Towers
Structural Steel
Forge and Hammer Welding
Reversing Valves

BLAW-KNOX COMPANY
601 Farmers Bank Building, Pittsburgh, Pa.

NEW YORK—30 E. 42nd St.
CHICAGO—Peoples Gas Bldg.
BALTIMORE—Bayard & Warner Sts.
DETROIT—Lincoln Bldg.
BIRMINGHAM—American Trust Bldg.
BUFFALO—Genesee Bldg.
LONDON, ENG.—Caxton Bldg.

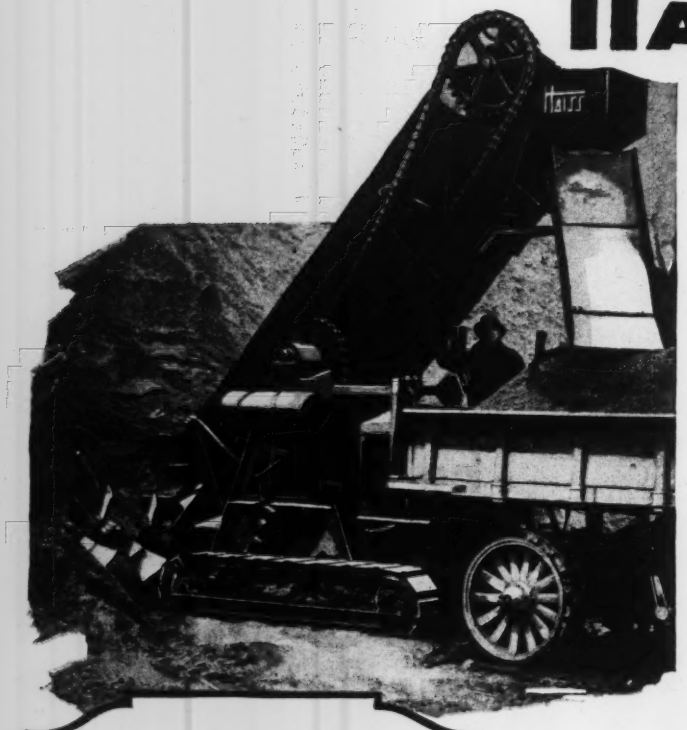
BLAW-KNOX BUCKETS

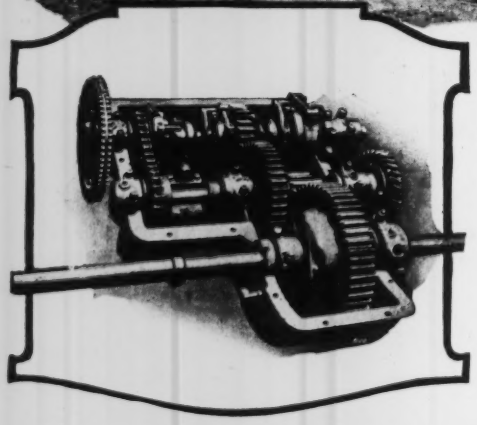
What Others Think

"In 1921 we bought a Dreadnaught, which we consider superior to any bucket we have ever used."

A. E. TRUDO, Mech. Supt.
THE FISK RUBBER CO.
CHICOPEE FALLS, MASS.

Low Upkeep? You get full measure in the sturdy built Haiss Creeper Loader!





The Enclosed Transmission

marks the Haiss as a good machine to own, all the clutches are inside and the size and weight of the gears speak for themselves.

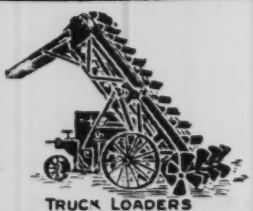
Haiss builds a machine that costs least over a period of years. How so? Every part is strong, no expense is spared to use the best materials for particular purposes. Remember, except for some bearing blocks, the whole machine is built of steel. Haiss uses steel castings for every cast part under strain. You don't have breakages.

Every provision is made to keep dust and grit from the wearing parts. The *enclosed transmission* alone should make the Haiss your unmistakable choice among loaders. All the gears, and clutches too, running in an oil bath, wholly enclosed and protected from dust and dirt. If you ever owned an open shaft machine you must know how quickly the clutches wear when exposed to stone dust flying around. The time you save in not making clutch adjustments every little while is worth a lot to you.

Alemite lubrication on all bearings and the Haiss designed hollow creeper tread rollers packed with grease make these machines truly economical. There's ample lubricant where the friction comes and hard steel parts to stand the gaff.

See the specification of materials in Catalog 523

The George Haiss Manufacturing Company, Inc
140th Street and Rider Avenue
New York, N. Y.


TRUCK LOADERS

HAISS
MATERIALS-HANDLING EQUIPMENT
CLAM SHELL BUCKETS

PORTABLE BELT CONVEYORS

Seven Years' Continuous Service and Still on the Job

"The Standard" Mixer shown in the photograph below has been in continuous service for seven years for the Hughes-Foulkrod Co., Philadelphia and Pittsburg Contractors. On this job it mixed the concrete for the foundations and at the time this photograph was taken, was mixing the mortar for the brickwork.

The Hughes-Foulkrod Co., have 12 "Standard" Mixers in operation at the present time.

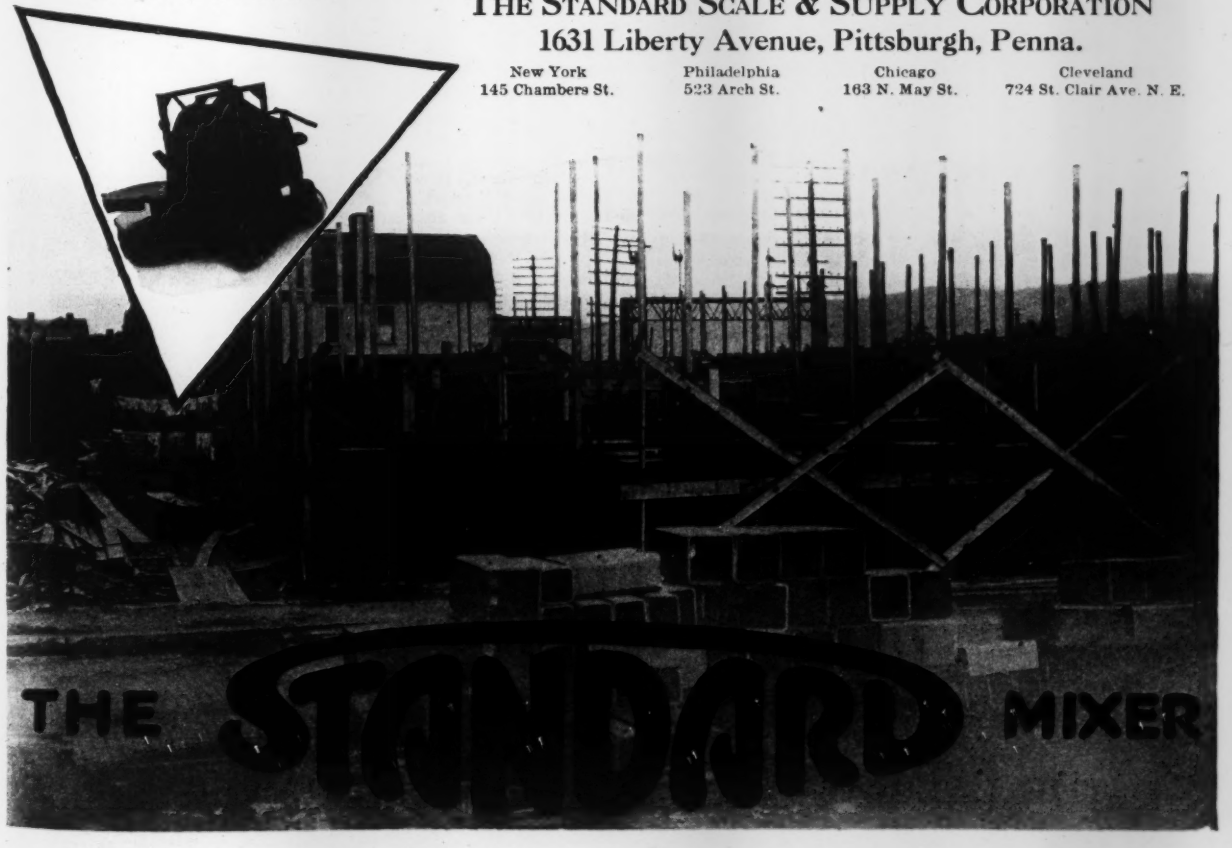
This "Standard," like many others in use throughout the country, has given satisfaction and has been absolutely reliable during its years of service—and even now, it shows no signs of wearing out—no mean accomplishment after the thousands and thousands of yards of concrete and mortar it has mixed.

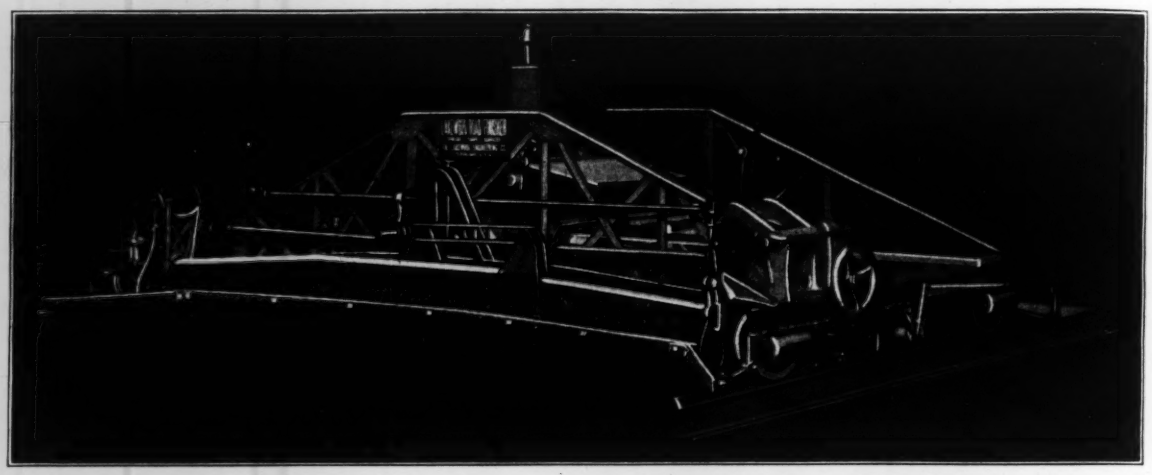
To reliable and well rated contractors who are in the market for a machine, we offer "The Standard" for 15 days' trial. Write us for further information and a new catalog.

The seven year old "Standard" Mixer in use on an apartment house job at Leetsdale, Pa.

THE STANDARD SCALE & SUPPLY CORPORATION
1631 Liberty Avenue, Pittsburgh, Penna.

New York	Philadelphia	Chicago	Cleveland
145 Chambers St.	523 Arch St.	163 N. May St.	724 St. Clair Ave. N. E.





The FINISHER and the FLOATBRIDGE

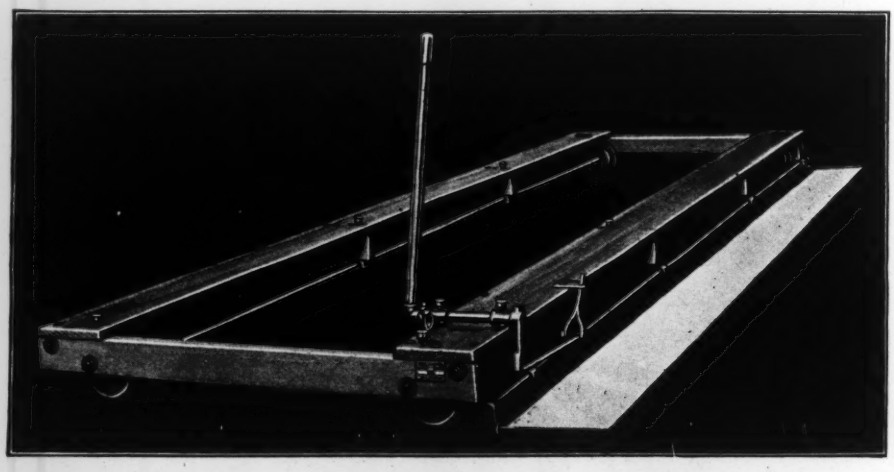
Is indispensable where 1 to 2 inch slump concrete must be finished— It Spreads, Tamps and Floats.

Combines a Substantial Bridge and Hand-operated Finishing Belt.

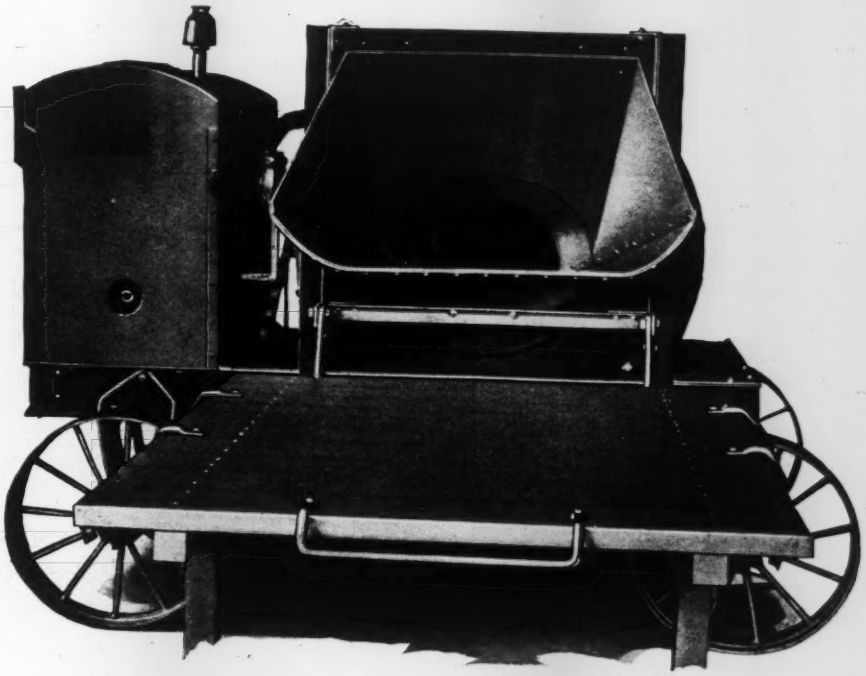
That better concrete of greater density results from the tamping action of the Lakewood Finisher is conclusively proved by core tests made in many localities. Not only does the tamping produce a smooth surface but elimination of voids results in *greater density to the very bottom of the slab.* Eleven years' experience and over 1,200 machines have proved the Lakewood principle of tamping concrete to be correct. There is no substitute for, or any method "just as good" as mechanical tamping. The 1924 Model Finisher gives a contractor more real value than ever before. This machine, with good forms, will give a smooth surface at a less cost than hand methods.

The belt float on the Lakewood Floatbridge is operated by the lever shown. The machine automatically advances with each stroke. In addition, the substantial bridge offers a support for trowelling and touching up. It's the handiest tool on the job. Made for 8 to 30 ft. widths. Used also on city street work, and can be furnished to travel on the curbs. Each machine has an extra belt as standard equipment.

Bulletin 42-R gives complete details of the Lakewood Finisher and the Floatbridge. Yours for the asking.



THE LAKEWOOD ENGINEERING CO., CLEVELAND



To the man who knows how to size up a 7-S mixer—

GO over the Leach-Oshkosh Mixer from wheels to exhaust. You'll find —if you know what's good and bad in mixers—that this is one 7-S Mixer without a single weak point.

The first thing that you'll look for is mixing speed—and you'll find it.

Time the drum speed of the Leach. You'll find that the Leach drum goes 3 to 5 revolutions per minute faster than you've ever seen a 7-S drum go. But that isn't all; the mixing action is perfect because of the correct design of the mixing blades.

And now look at the discharge chute. It's longer and wider than any chute you've ever seen on a mixer of this size—36 inches long and 15½ inches wide. It's the pivoted type and has a steeper slope than you're accustomed to seeing—6 degrees greater than the average slope of the discharge chute in other 7-S mixers.

Try the short discharge lever. The action is easier —simple linkage and good balance are responsible for that action. And don't overlook the locking device that holds the chute in the discharge position. No wonder the Leach-Oshkosh discharges in 7 to 8 seconds!

Now go around to the charging side and look at the big receiving hopper. The lower edge is only 13 inches above the platform. You'll know how convenient this is when you dump a wheelbarrow of sand into the drum through the big opening. Just one more Leach refinement!

There isn't enough space here to cover the hundred and one distinguishing points of the Leach and its trouble-proof engine, but it doesn't take a practical man long to discover them.

The coupon below brings a book covering the Leach in detail and including the Robert W. Hunt Company inspections described below.

Mail it.

Leach Company, 649 S. Main St., Oshkosh, Wisconsin

Formerly Oshkosh Mfg. Co.

LEACH - *Oshkosh* MIXER

Leach leads!

The Robert W. Hunt Co., nationally known research engineers, has made a careful engineering investigation of most mixers of the 7-S class. These investigations are significant to every careful buyer of concrete mixers. The coupon opposite brings your copy.

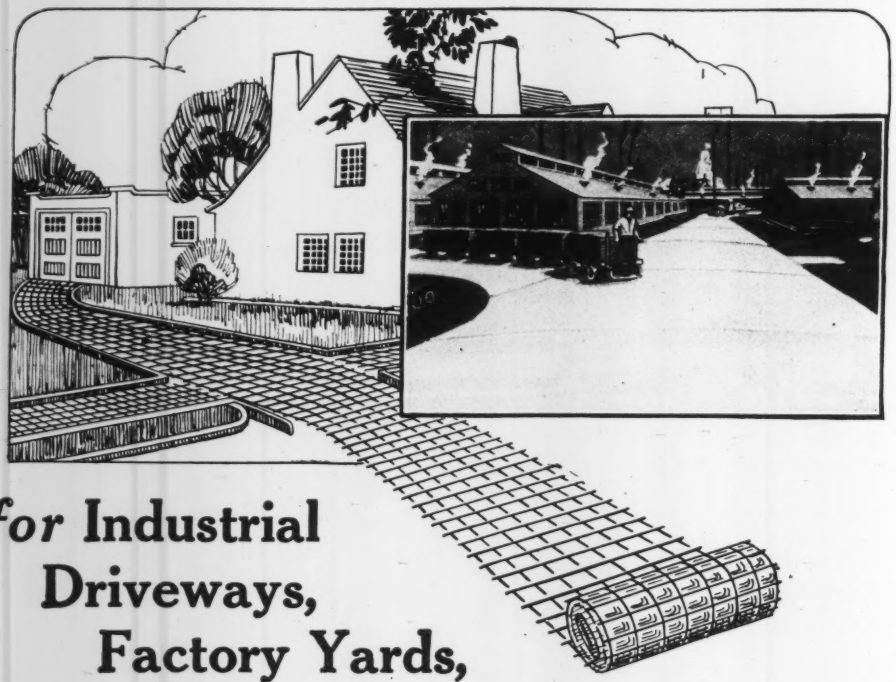
Send a copy of the Robert W. Hunt Company inspections and complete details of the Leach-Oshkosh 7-S Mixer to

Firm .....

Address .....

Mail to Leach Company, 649 South Main St., Oshkosh, Wisconsin.

E. N.-R. 6-26M-BTG



for Industrial Driveways, Factory Yards, Sidewalks and Driveways

Driveways, Factory Yards, and Sidewalks, when built of *reinforced* concrete, will outwear and outlast any and all other types of construction.

For *invisible* strength and for permanency, use National Steel Fabric Reinforcement because it provides the greatest amount of strength for a given amount of steel and, at the same time, is less costly to transport, handle, and place in the concrete.

Get in touch with our nearest office regarding your requirements.

Furnished in Rolls and Sheets

National Steel Fabric Company
(Subsidiary of Pittsburgh Steel Company)
700 Union Trust Bldg., Pittsburgh, Pa.

OFFICES: Atlanta, Chicago, Cleveland, Denver, Detroit Houston, Los Angeles, New Lork, Philadelphia, Pittsburgh, St. Louis, San Antonio, San Francisco

STOCKS: Chicago, Houston, Los Angeles, New York, Pittsburgh, San Francisco

NATIONAL STEEL FABRIC CO

WORLD'S LARGEST MANUFACTURERS *of* WELDED STEEL FABRIC

Greater Possibilities

THE INSLEY STEEL MAST HOIST plant has greater possibilities for the handling of either a 7-S or 14-S batch than almost any other equipment available to the concrete builder.

Its purchase and erection costs are such it does not mean the tying up of anticipated profits in equipment on the medium sized job.

Its operating efficiency is superior to that of the wood tower equipment heretofore used in that it is possible to reach 60 ft. with self supported chuting.

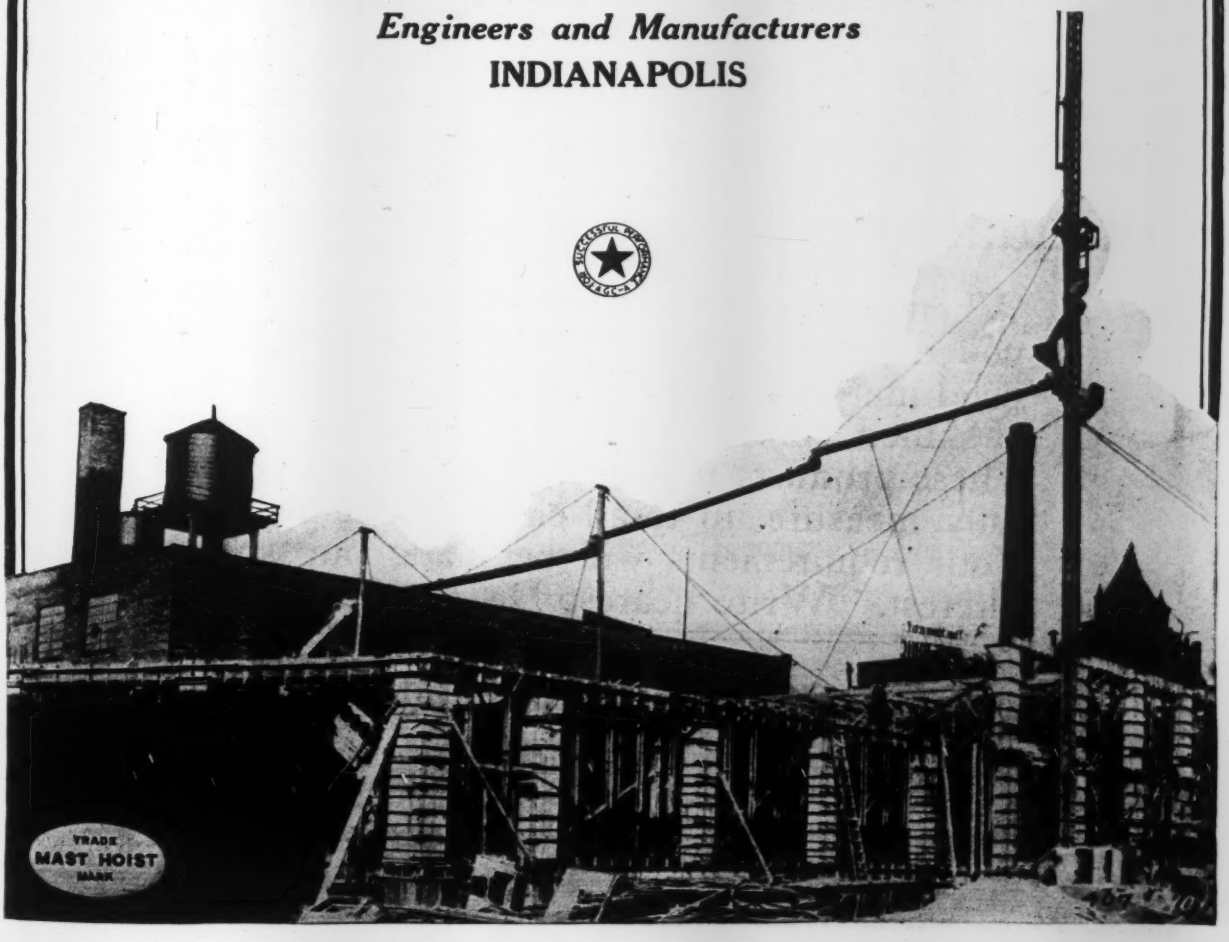
Its salvage value is high in that outside of chutes and sheaves there are practically no parts subject to wear. It is good for job after job.

If you have concrete to handle it will pay you to write for Catalog No. 45.

INSLEY MANUFACTURING CO.

Engineers and Manufacturers

INDIANAPOLIS



KEYSTONE COPPER STEEL

Every sheet metal shop and office should have a set of our latest revised Weight Cards for Black and Galvanized Sheets.

KEYSTONE COPPER STEEL

Are you interested in the problem of rust-resistance? Send for booklet "Reducing Corrosion in Steel Cars."

IT IS true business economy to insist upon Steel Sheets and Tin Plates that represent the highest standards of quality and value.

When you buy the products of our great mills, you are securing the combined excellence of good materials and craftsmanship—the output of skilled, conscientious, and trained workmen. These products render high class service, and fully measure up to all claims made for them. Your requirements will be made our special interest. Write nearest District Sales Office.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, 30 Church St., New York City; 36-38 New Broad St., London, E. C.

Why did the Railroads purchase over 50,000 TONS

Of Keystone Copper Steel Sheets for use in new car construction during the first twelve weeks of this year?

KEYSTONE COPPER STEEL

There is but One Answer!

Because Keystone is a *superior* product—it lasts longer, costs less, and minimizes replacements and repairs. If you require maximum service and *rust-resistance*—you need Keystone Copper Steel. Shall we send booklets with the proof?

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

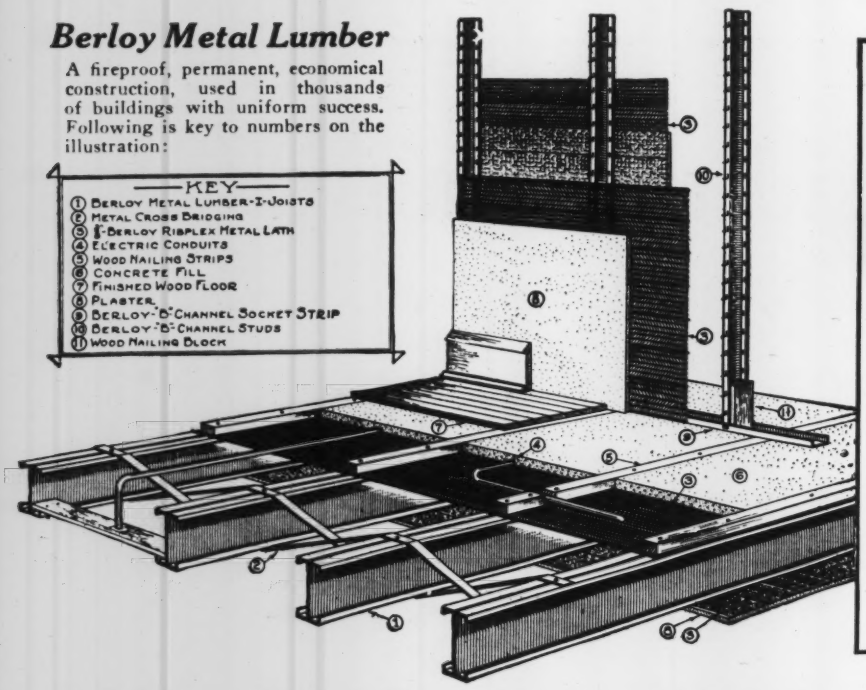
MANUFACTURERS OF

Sheet and Tin Mill Products for all purposes—Black Sheets, Galvanized Sheets, Tin and Terne Plates, Special Sheets for Stamping Corrugated and Formed Roofing and Siding Materials, Electrical Sheets Wellsville Polished Steel Sheets, Automobile Sheets in all grades, Deep Drawing Sheets, Culvert and Flume Stock, Black Plate, Etc.

Berloy Metal Lumber

A fireproof, permanent, economical construction, used in thousands of buildings with uniform success. Following is key to numbers on the illustration:

KEY
1. Berloy Metal Lumber-I-Joists
2. Metal Cross Bridging
3. ⅜-Berloy Ribplex Metal Lath
4. Electric Conduits
5. Wood Nailing Strips
6. Concrete Fill
7. Finished Wood Floor
8. Plaster
9. Berloy-"B"-Channel Socket Strip
10. Berloy-"B"-Channel Studs
11. Wood Nailing Block



Brick walls are not enough, Furnace walls, too, are made of brick

More than ninety fires out of a hundred originate on the interior.

In view of this fact it would seem that far too little attention has been given to making interiors fireproof or at least fire-resistive.

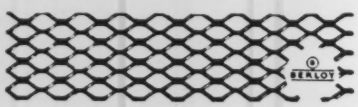
This page tells about fire-safe interior constructions that have been used in thousands of buildings.

THE WAY TO FIRE SAFETY

Berloy ⅜ in. Ribplex

Metal Lath with ribs ⅜-in. high spaced 8-in. on centers. Ideal for all straight away lath work.

Diamond Mesh Lath



Essential for ornamental furring and other formed lath work. Excellent for all lath purposes.

Berloy ¾ in. Ribplex

For work requiring heavier, stiffer reinforcement. Ribs are ¾-in. high spaced 4.8-in. on centers.

Our nearest sales office will gladly give you full information on the Berloy line of Metal Laths for use in any form of lath work as well as with Metal Lumber.

Fire losses continue to mount

In spite of propaganda against carelessness. In spite of efficient fire departments. In spite of brick and stucco walls. In spite of metal or other unburnable roofs our fire losses continue to mount.

One building burns to every four built

This is an average, over ten years.
Engineers! Architects! Contractors! Building Owners, why?
Let's face this thing squarely. What is the fundamental weakness? What should we do to save our buildings?

We must stop providing available fuel

It is not an uncommon thing for a building to be a mass of flame within ten minutes after a fire starts. Fire departments have no chance to save the building. Inmates often fail to escape with their lives.

Most fires originate on the interior

Ninety-six percent of all fires are said to originate inside the building. Carelessness, overheated furnaces, defective wiring, and dozens of other causes of fires cannot be controlled. Fires will continue to start.
Interiors should be made fire resistive by protecting burnable material, or, better still, fireproof throughout.

Ideal fire-safe interior constructions

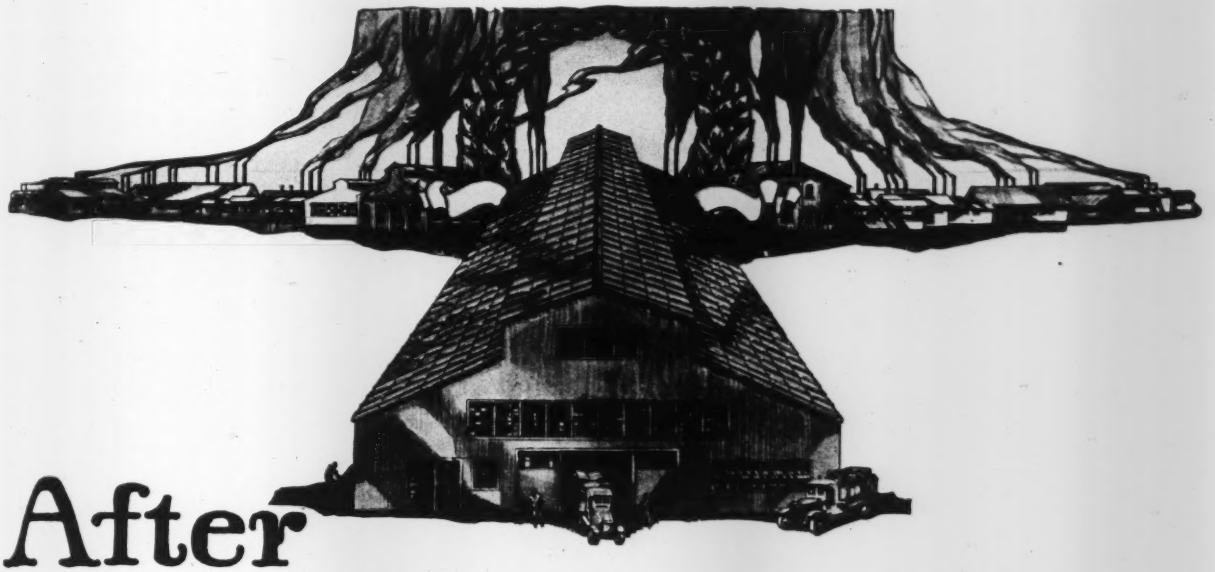
Berloy Metal Lumber provides an economical fireproof interior construction. The Underwriters' Laboratories have given an official rating of one hour to wood frame partitions and ceilings protected by plaster on Metal Lath. Our nearest office will gladly give you full information on these materials. Ask for Metal Lumber Bulletin L-24 or Lath Folder F-24.

THE BERGER MFG. CO.

Canton, O., Boston, New York, Philadelphia, Chicago, St. Louis, Kansas City, Minneapolis, San Francisco, Los Angeles, Dallas, Roanoke, Jacksonville
Export Department: 512 W. 25th Street, New York, N. Y., U. S. A.

BERLOY

METAL LUMBER—RIBPLEX—METAL LATH



After

exhaustive investigation, delving for facts on roofings and keeping close record of "Cementile" installations, we arrive at the following conclusion:

CEMENTILE

The Roof Everlasting

is not only the ideal roof for all buildings with steel roof supports, but according to investigations, is absolutely the best roof. Ask us to prove the last statement. Use the coupon below.

American Cement Tile Mfg. Co.
829 Oliver Building, Pittsburgh, Pa.
PLANTS: Wampum, Pa. - Lincoln, N. J. - Birmingham, Ala.
OFFICES: Pittsburgh - New York - Philadelphia - Atlanta - Birmingham

"I'm from Missouri"
"Show Me"

CEMENTILE

Company ..... Individual .....

Address .....

City .....

State .....

CEMENTILE

RAIL STEEL
REAL STRENGTH

Rail Steel and Building Authorities

THE BROWN HOTEL, LOUISVILLE, KY.
W. J. Knight & Co., Engineers — Preston J. Bradshaw, Architect
McCormack-Combs Const. Co., Contractors

Municipal building codes have been devised solely for the purpose of public safety. Their specifications define the best accepted economic practice based on years of experience in the use of building materials.

Our principal cities where the largest buildings are being erected and where the utmost care must consequently be exercised have shown their confidence and taken the lead in including Rail Steel Bars in their specifications.

The following is a partial list of these cities, which gives conclusive proof of the dependability of Rail Steel Bars, rolled by mills of the Rail Steel Products Association.

List of Principal Cities

Akron, O.
Atlanta, Ga.
Boston, Mass.
Cambridge, Mass.
Chicago, Ill.
Charleston, S. C.
Cincinnati, O.
Cleveland, O.
Columbus, O.
Dallas, Tex.
Denver, Colo.
Des Moines, Ia.
Fort Worth, Tex.
Grand Rapids, Mich.
Hartford, Conn.
Hamilton, Canada
Indianapolis, Ind.
Jacksonville, Fla.
Kansas City, Mo.
Kitchener, Canada
Los Angeles, Cal.
Louisville, Ky.
Lowell, Mass.
Memphis, Tenn.
Milwaukee, Wis.
Mobile, Ala.
Montreal, Canada
Newark, N. J.
New York, N. Y.
Orange, N. J.
Pittsburgh, Pa.
Portland, Me.
Portland, Ore.
Providence, R. I.
San Francisco, Cal.
Schenectady, N. Y.
Scranton, Pa.
Spokane, Wash.
Springfield, O.
St. Louis, Mo.
St. Paul, Minn.
Syracuse, N. Y.
Toronto, Canada
Utica, N. Y.
Winnipeg, Canada
Windsor, Canada
Worcester, Mass.

Send for this Valuable Book—FREE

The first and only authoritative and comprehensive treatise on concrete reinforcing bars and containing most important information on the manufacture, qualities and use of Rail Steel Bars. The cost of this booklet makes it necessary for us to control its distribution and we ask that your request for copy be sent us on the letterhead of an architectural or engineering firm. Address the nearest office, Dept. A.

The Rail Steel Products Association was organized to continue and further promote the high quality standard of Rail Steel, established after many years of co-operative research work by the metallurgists of the individual rolling mills who are now members of this Association.

Specify your reinforcing steel to meet A.S.T.M. Specification A-16-14 or equal.

RAIL STEEL PRODUCTS ASSOCIATION

(Reinforcing Bar Division)

Buffalo Steel Co.
Tonawanda, N. Y.

Calumet Steel Co.
Chicago, Ill.

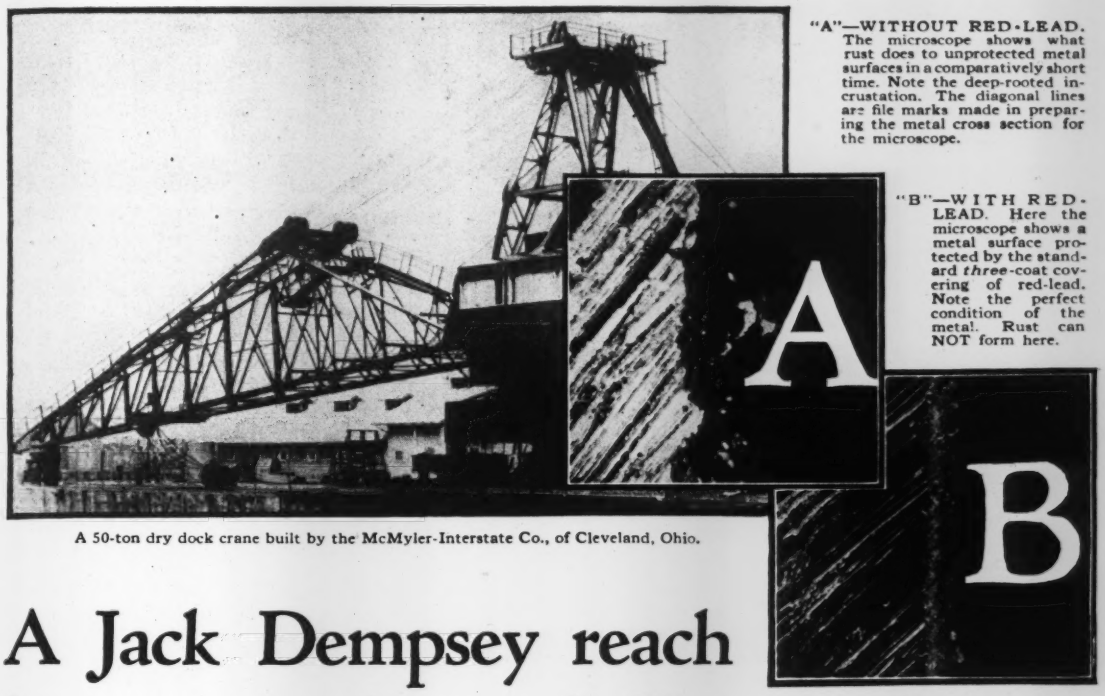
Laclede Steel Co.
St. Louis, Mo.

Burlington Steel Co.
Hamilton, Can.

Franklin Steel Works
Franklin, Pa.

The Pollak Steel Co.
Cincinnati, O.

RAIL STEEL *for* REINFORCING



"A"—WITHOUT RED-LEAD. The microscope shows what rust does to unprotected metal surfaces in a comparatively short time. Note the deep-rooted incrustation. The diagonal lines are file marks made in preparing the metal cross section for the microscope.

"B"—WITH RED-LEAD. Here the microscope shows a metal surface protected by the standard *three*-coat covering of red-lead. Note the perfect condition of the metal. Rust can NOT form here.

A 50-ton dry dock crane built by the McMyler-Interstate Co., of Cleveland, Ohio.

A Jack Dempsey reach but just a thin red film for defense

THE wheel base of this crane is only 22 feet. The overturning moment imposed by the loads at extreme radii is exceptionally large, yet it handles these loads with ease and safety—

Main Hoist, 50 tons at 90 ft., 6 in. radius
Auxiliary Hoist, 15 tons at 129 ft., 6 in. radius
Whip Hoist, 5 tons at 133 ft. radius

In designing this crane the engineering problem was complicated by the large overturning moment and also by the extraordinary wheel loads. The load is distributed over 32 wheels and is equalized by a system of equalizer beams, so that the loads on the wheels supporting one corner of the crane are uniform

Every square inch of metal on such important and costly equipment must surely be protected from rust. Red-lead may provide *only a thin red film for defense,* but the thin red film is adequate. Metal surfaces coated with pure red-lead are safe from rust. Dutch Boy red-lead is *pure* red-lead.

Save the surface and you save all

Mixed with pure linseed oil, Dutch Boy red-lead makes a paint that cannot be surpassed as a rust preventive. It spreads smoothly and uniformly and has unusual covering power. It sticks tight to clean metal. It dries to a hard, yet elastic, coating which expands and contracts without cracking. It gives *full* and *economical* protection to the metal surfaces it covers.

Dutch Boy red-lead is obtainable in both paste and liquid form. The *liquid* comes in the natural red-lead color and also in light and dark green, light and dark brown and black finishing coats. The *paste* comes in the natural color only, but can be shaded to browns, greens and blacks.

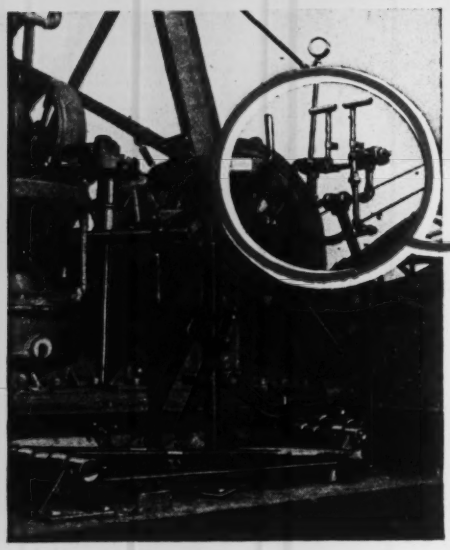
NATIONAL LEAD COMPANY

New York, 111 Broadway; Boston, 131 State St.; Buffalo, 116 Oak Street; Chicago, 900 West 18th St.; Cincinnati, 659 Freeman Ave.; Cleveland, 820 West Superior Avenue; St. Louis, 722 Chestnut St.; San Francisco, 485 California Street; Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue; Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street.

Dutch Boy Red-Lead

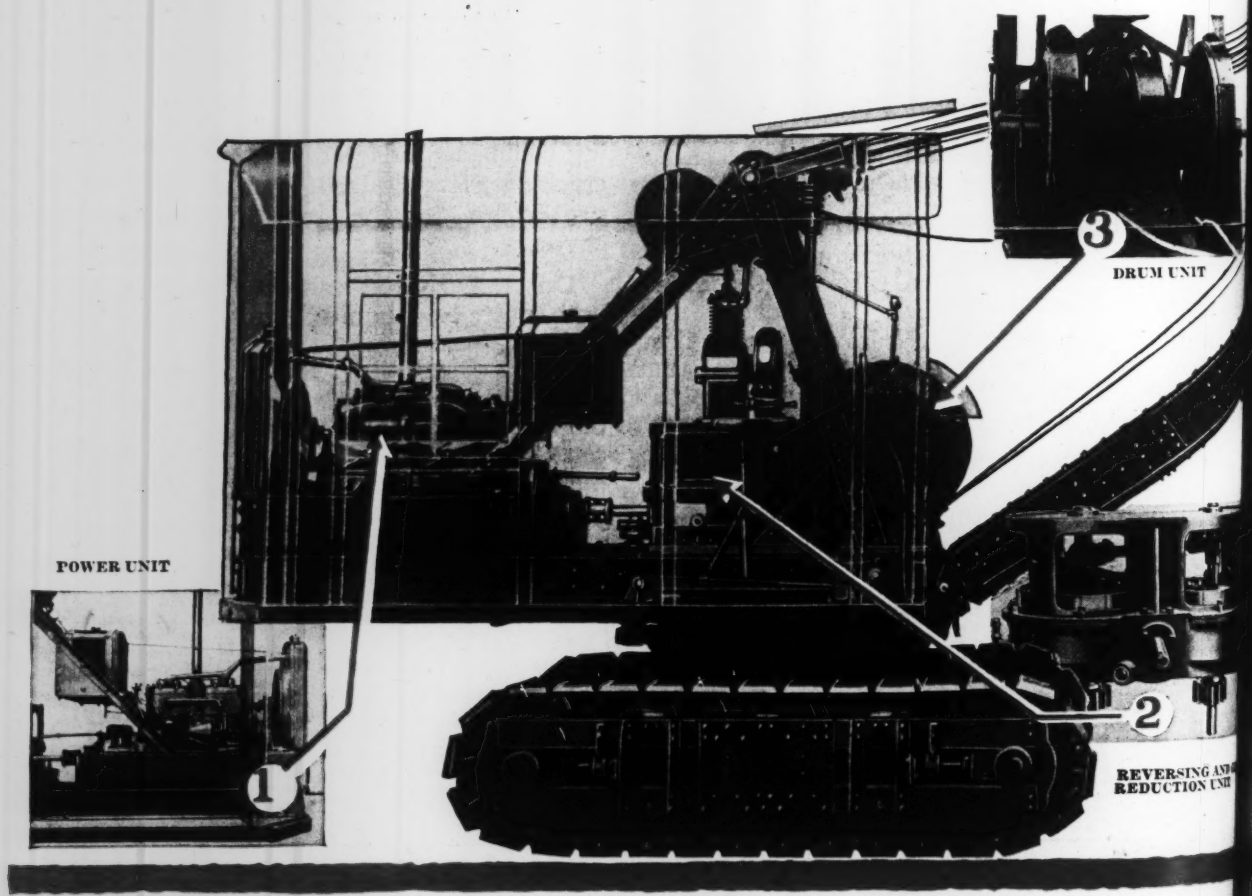
AUSTIN

THREE LEVER AIR CONTROL



Direct Air Control for Drum Clutches

The Austin Air Control promotes efficient, speedy operation. It is the simplest form of control ever used for clutches, due to the elimination of toggles, fingers, etc. The clutches are operated by straight air, giving instant contact or release. These clutches make contact over the entire 360 degrees of clutch surface—thus utilizing the full power applied.

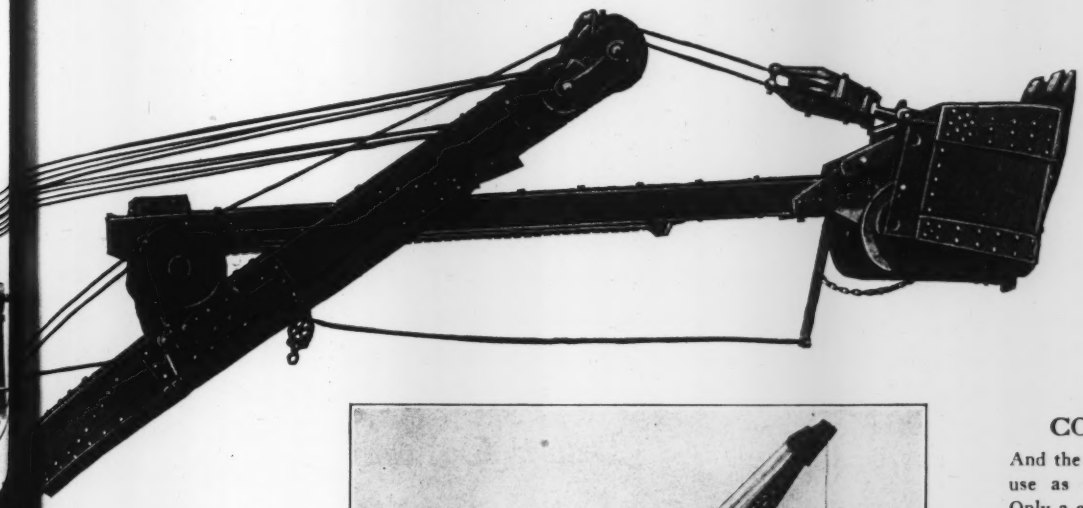


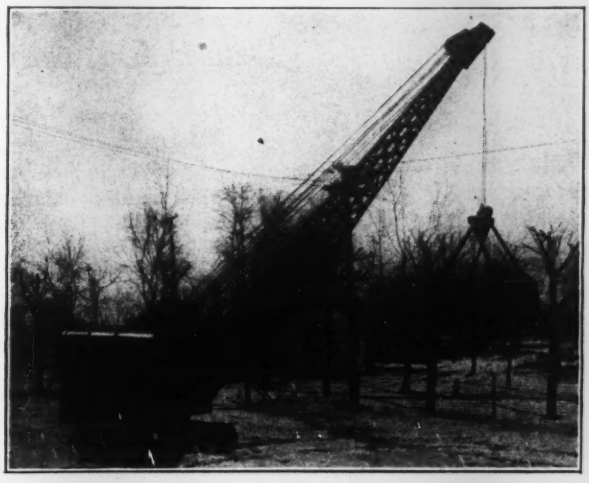
SIMPLEX SHOVEL

Speed with endurance is what you get when you purchase an Austin Simplex Shovel. It is speed that completes the job with a showing of profit. Endurance maintains the profit on every job over a long period. The simplicity of design reduces the number of wearing parts adding to the life of the unit in many ways. Heavy individual parts increase the strength of the machine—making a more rigid construction.

Rigid construction reduces the upkeep cost and insures low cost of operation.

Complete details given on request for folder DL **103-S**



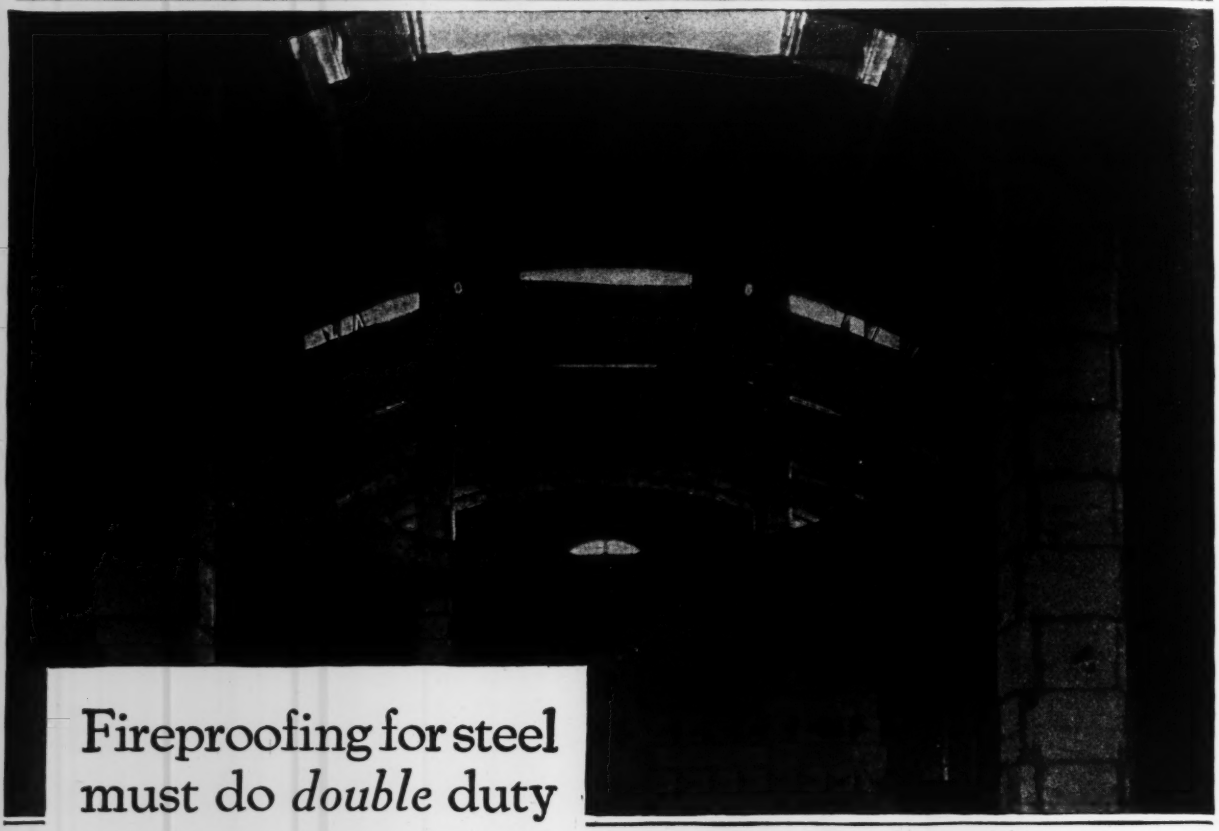


CONVERTIBLE

And the Simplex is designed for use as a Crane or Clamshell. Only a change of booms and re-reeve of cables is necessary. Buy a machine that you can keep profitably employed at all times—the Austin Simplex.

AUSTIN MACHINERY CORPORATION
3503 Dorr Street TOLEDO, OHIO
DISTRICT OFFICES—NEW YORK, CHICAGO, ATLANTA, GA. KANSAS CITY, MO.
Distributors in Most Large Cities in the U. S. A. and at Woodstock, Ont., Canada

Austin Machinery Corporation, Toledo, Ohio.
Please send to my address complete information covering the Austin Shovel-Crane. DL-103-4.
Name .....
Concern .....
Address .....



Fireproofing for steel must do *double* duty

A dependable fireproofing material for beams, columns and girders must do more than resist fire. It must *insulate* the steel so that its temperature will never exceed 500° F., the point at which steel begins to lose strength.

Pyrobar Gypsum Tile meet both requirements. Incombustible, they also bar heat travel, and when exposed to intense heat a slow calcination allows only 5 per cent of the heat to reach the steel. They protect against steel failure in most fires.

Pyrobar Tile come in uniform square-edge units. They are easily fitted to beams, columns and girders and consequently cost less in place than less protective materials. Write for booklet describing different types of Pyrobar covering and showing erection details.

UNITED STATES GYPSUM COMPANY

World's Largest Producers of Gypsum Products

General Offices:

Dept. J, 205 West Monroe Street, Chicago, Illinois

PYROBAR

GYPSUM TILE

for

Beams, Columns, Girders

New Edwards Hotel, Jackson, Mississippi. Architect: W. T. Nolan. 26,000 lineal feet Pyrobar Beam and Column Covering used

U.S.G.

SPENCER WHITE & PRENTIS FOUNDATIONS

J. L. HUDSON STORE—DETROIT, MICHIGAN

Byrant & Detwiler Co., Detroit, General Contractors—Smith, Hinchman & Grylls, Detroit, Architects

For this building, within an existing store which is still in operation, we are installing 78 caissons, 85 to 90 feet below curb, together with a complete retaining wall to a new sub-basement level. This contract involves the kind of work we specialize in, namely, the installation of a new foundation without disturbing an existing building, so that when the old building is wrecked, this new foundation will be ready.

THE SPENCER, WHITE & PRENTIS COMPANY
1501 EUCLID AVENUE, CLEVELAND, OHIO
1200 WASHINGTON ELVD., DETROIT, MICH.

SPENCER, WHITE & PRENTIS INCORPORATED
100 WEST 41st STREET
NEW YORK CITY

TUBA STEEL FOUNDATIONS
PRETEST FOUNDATIONS PAT. JUNE 12, 1917
PRETEST UNDERPINNING PAT. FEB. 20, 1917
PILES—SHAFTS—TUNNELS—STEEL AND CONCRETE CONSTRUCTION

CARNEY
for Brick and Tile Mortar

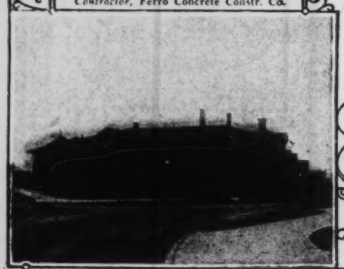
Makes Four Cubic Feet of Smooth Mortar to Every Sack

Carney Has These Exclusive Merits:

IT can be used directly after mixing or left in the box over night. There is no waste to Carney. It requires no lime which saves time and labor in mixing. It prevents loss and waste through carelessness. Each sack (cloth or paper) contains one cubic foot. It has a four parts sand carrying capacity which means four cubic feet of smooth mortar to one sack cement. It lays the maximum number of brick. Being more plastic and smoother working, the mason can work faster and easier on the wall. It does not harden in the box. It can be used immediately after mixing and does not require soaking. It works perfectly in cold weather. It is ideal for all wall-bearing buildings. It becomes harder than the brick and tile it binds, continuing to harden indefinitely. It sets a creamy white, contrasting beautifully with brick and tile. Contractors bid lower, do better work and make more profit with Carney. The final cost of a Carney wall is always lower.

Carney is the perfected cement for brick and tile mortar.

SOUTHERN RY. BLDG., Cincinnati, Ohio
Architect, Samuel S. Godley
Contractor, Fetro Concrete Constr. Co.



STANDARD OIL CO. COMMUNITY HOUSE, Whiting, Ind.
Architect, Shattuck & Layer
Contractor, Great Lakes Constr. Co.

CONSOLIDATED HIGH SCHOOL, Shelby, Ia.
Architect, Jno. Latenser & Sons
Contractor, Jno. E. Wakefield Company

'PEOPLE'S TRUST & SAVINGS BANK BLDG., Chicago, Ill.
Architect, Jarvis Hunt
Contractor, J. B. French

POLK DIRECTORY BLDG., Detroit, Mich.
Architect, Richard H. Marr
Contractor, Martin & Krausmann Co.

ROOSEVELT SCHOOL, St. Paul, Minn.
Architect, F. X. Tewes
Contractor, Gauger-Korsmo Constr. Co.

MCKINLEY SCHOOL, W. Park, Ohio
Architect, Fulton, Taylor & Cahill
Contractor, Chas. Peterson Co.

The Carney Company

Cement Makers Since 1883

Mankato, Minn.

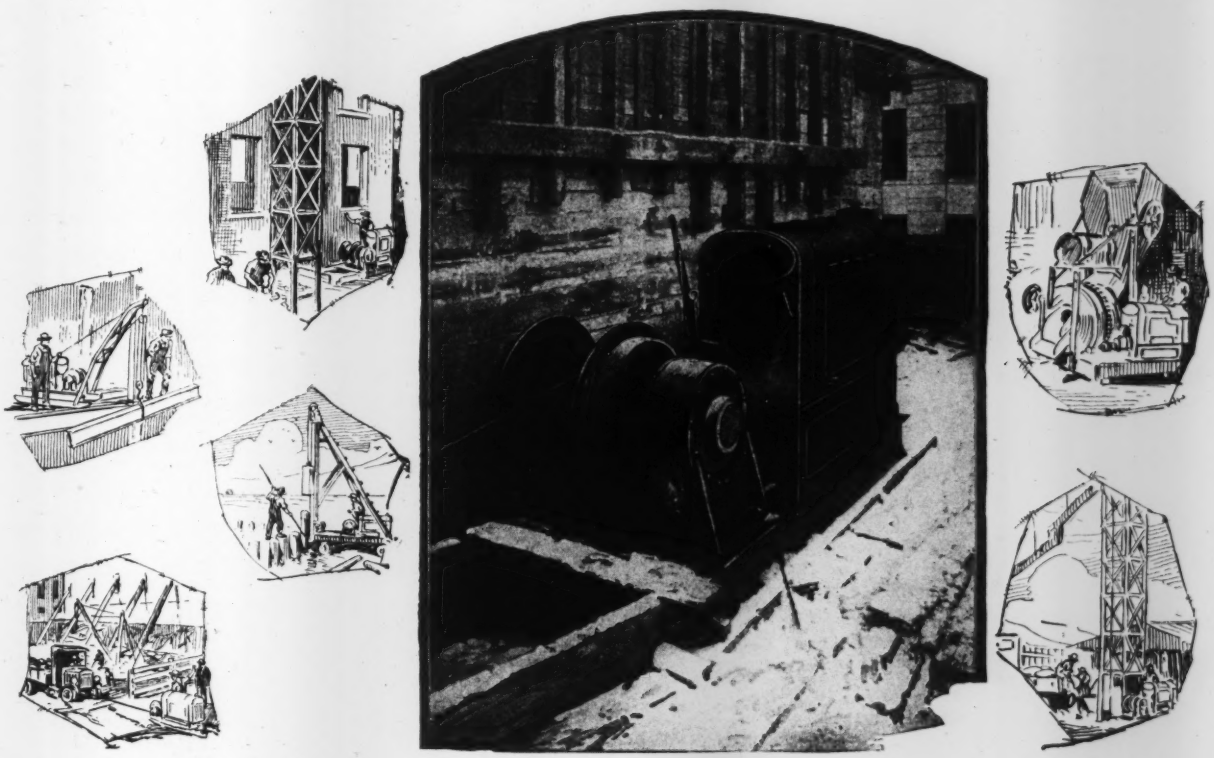
Mills: Mankato, Minn., Carney, Minn.

District Sales Offices:

Leader-News Building, Cleveland; Chamber of Commerce Building, Chicago; Omaha National Bank Building, Omaha; Syndicate Trust Building, St. Louis; Book Building, Detroit; Builders' Exchange, Minneapolis.

Specifications: 1 part Carney to 4 parts sand.

Another OTIS Labor-Saver



A Husky Gasoline Hoist For All Around Work

Capacity—3500 lbs. on a single line at 150 ft. per min.

(Average speed for full drum)

1 speed faster up to 500 ft.—1 speed slower down to 20 ft. per min.

Note These Revolutionary Advantages:

Flexible as a steam hoist—speedy as an electric, with full 25 horsepower, available at exact line speed required.

100% safety assured by single lever control. Load cannot be dropped accidentally.

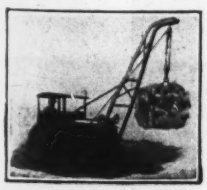
Serviced at 20,000 Fordson Service Stations.

Side Power Take-off to drive other equipment essential to most contracting jobs, full horsepower available.

Heavy Worm Drive and Gearing on Ball Bearings, enclosed in Oil Bath, guarantees constant service.

Heat-treated Alloy Steel throughout.

Write today for illustrated booklet containing full details about this remarkable hoist, and showing how it may be adapted with ease to a variety of "difficult" jobs.



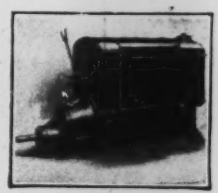
OTIS CRANE AND HOIST

OTIS ENGINE CORPORATION

"Haulage, Hoisting and Power Units for Every Job."

247 Park Avenue, New York City

TELL US YOUR PROBLEM



26 OTIS POWER UNITS

TELSMITH IS *STEEL*—

GUARANTEED AGAINST BREAKAGE BY TRAMP IRON

"Oho," sings the hammer-head as he slips into the crusher! "Just see what I'm going to do to this chap! I'll bend his shaft and I'll crack his frame! What I don't break, the scrap man will buy cheap." But, unfortunately for Mr. Hammer-head, that particular machine is a modern Telsmith Crusher of the 1923-1924 crop, with *steel* frame, *steel* crown and *rigid* shaft, all guaranteed against breakage by tramp iron. Too bad! The pleasant little plot falls flat. Telsmith just squeezes and chews the foxy hammer beyond recognition. After a short but decisive engagement, that hunk of steel is glad to escape onto the conveyor and beat it for the bins.

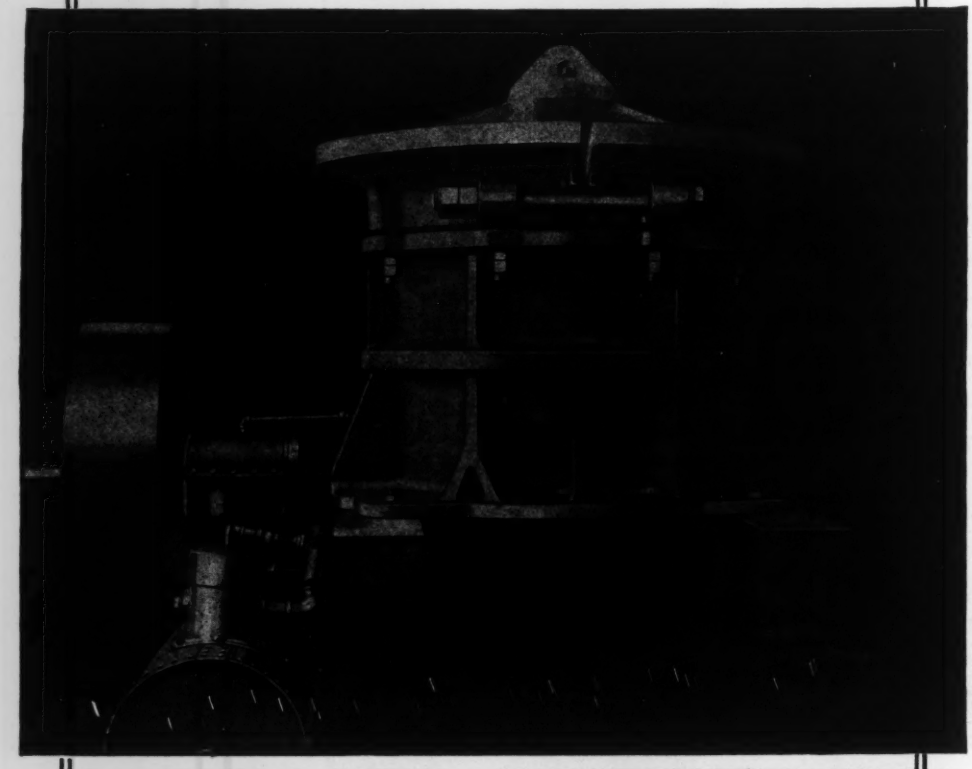
But, if the crusher is iron instead of steel — an ordinary breaker instead of a Telsmith — the tale is then quite a bit different. Picture a frantic master mechanic — a rush message for a new frame — anxious days of waiting and then strenuous hours of night work, putting the old wreck back into shape again.

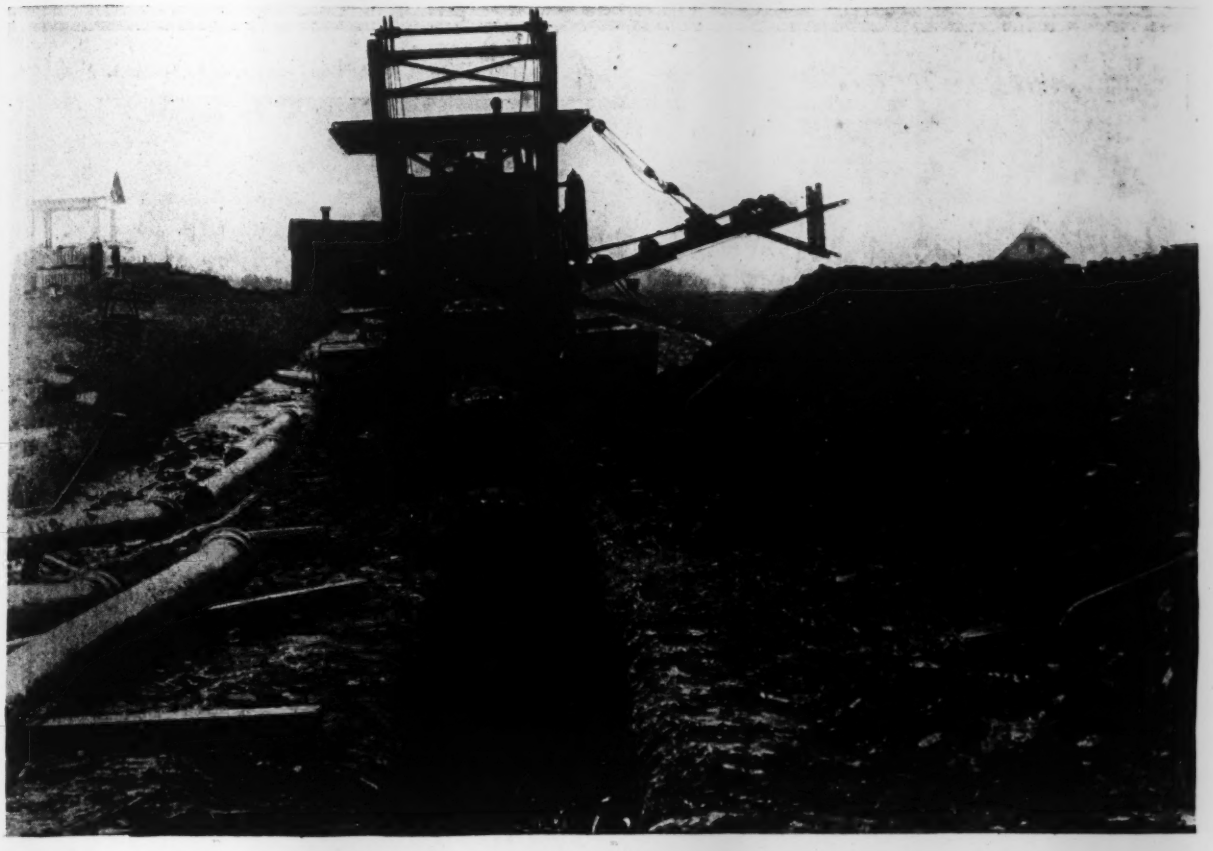
You take your pick of these situations when you buy a crusher. Buy a Telsmith and you have "crusher insurance"— otherwise you carry your own risk. Better look into it. Glad to send you catalog No. 155 (Telsmith Primary Breaker) and bulletin No. 2-F-2 (Telsmith Reduction Crusher).

SMITH ENGINEERING WORKS
3198 Locust Street, Milwaukee, Wisc.

Canadian Representatives: Canadian Ingersoll-Rand Co., Montreal, P. Q.

Old Colony Bldg. Chicago, Ill.
50 Church St. New York City
816 Otis Bldg. Philadelphia, Pa.
110 W. Park Way, N. S. Pittsburgh, Pa.
325 W. Main St. Louisville, Ky.
141 N. Front St. Columbus, O.
2540 University Ave. St. Paul, Minn.
Franklin and Channing Aves. St. Louis, Mo.
Bunting Hardware Co. Kansas City, Mo.
J. W. Bartholow Co. Dallas, Tex.
Alamo Iron Works San Antonio, Tex
523 Boston Bldg. Denver, Colo.
Salt Lake Hdw. Co. Salt Lake City, Utah
625 Market St. San Francisco, Calif.
Brown, Bevis Co. Los Angeles, Calif.
Road Builders Eq. Co. Portland, Ore.





Nine Years' Service Demonstrates the Value of P & H Construction

The Mierswa Construction Co. of Oshkosh, Wis., have used a P & H Trench Excavator since 1916. Nine years' experience has well demonstrated the lasting worth and economy of P & H design and quality construction.

To take care of increased business an additional Trencher was needed this year.

The fact that another P & H was purchased, again emphasizes the point that the best test of an excavator is actual field performance over an extended period.

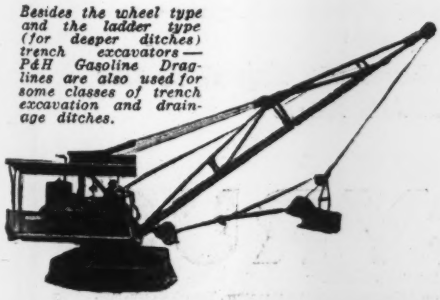
And the aggregate experience of these many years of service of hundreds of P & H Machines,—is built into the P & H you buy today.

The largest plant in the country devoted to the manufacture of gasoline excavating machinery insures prompt delivery. Bulletins on Trenchers (18-X) or on Shovels, Draglines, mailed on request.

CORDUROY

Follow the Corduroy Trail —the "Tread" Mark of the P&H

Besides the wheel type and the ladder type (for deeper ditches) trench excavators — P&H Gasoline Draglines are also used for some classes of trench excavation and drainage ditches.



Excavating Machinery Division

Pawling & Harnischfeger Co.

Established in 1884

3804 National Avenue, Milwaukee, Wis.

New York, San Francisco, Memphis, Chicago, Portland, Dallas, Detroit, Pittsburgh, Seattle, Atlanta, Philadelphia, Los Angeles, St. Louis, Kansas City

P&H TRENCH EXCAVATORS

Louis A. Ott of Montreal began his career operating a steam shovel on the Chicago Drainage Canal in 1894.

With this great project the history of the modern steam shovel began.

It was there that the world first learned what steam shovels could do in rock.

It was then that the foundation of Mr. Ott's long experience was laid.

He has learned about shovels in the hard school of experience.

He now enjoys the esteem, won through success, as a first ranker among Canadian contractors.

He has owned or operated nearly every make of shovel, but he now stakes his reputation on Bucyrus — four of them — this is why he says:

"I Have Found Nothing Equal to the BUCYRUS 20-B"

Send for these Bulletins:

20-B — ¾-yard.
Steam C-201-N
Diesel.....B-201-N
Gasoline.....F-201-N

30-B — 1-yard.
Steam C-304-N
Diesel and Gas.F-302-N

Also as Draglines, Cranes, etc. Steam, Diesel, Electric or Gasoline.

586

BUCYRUS

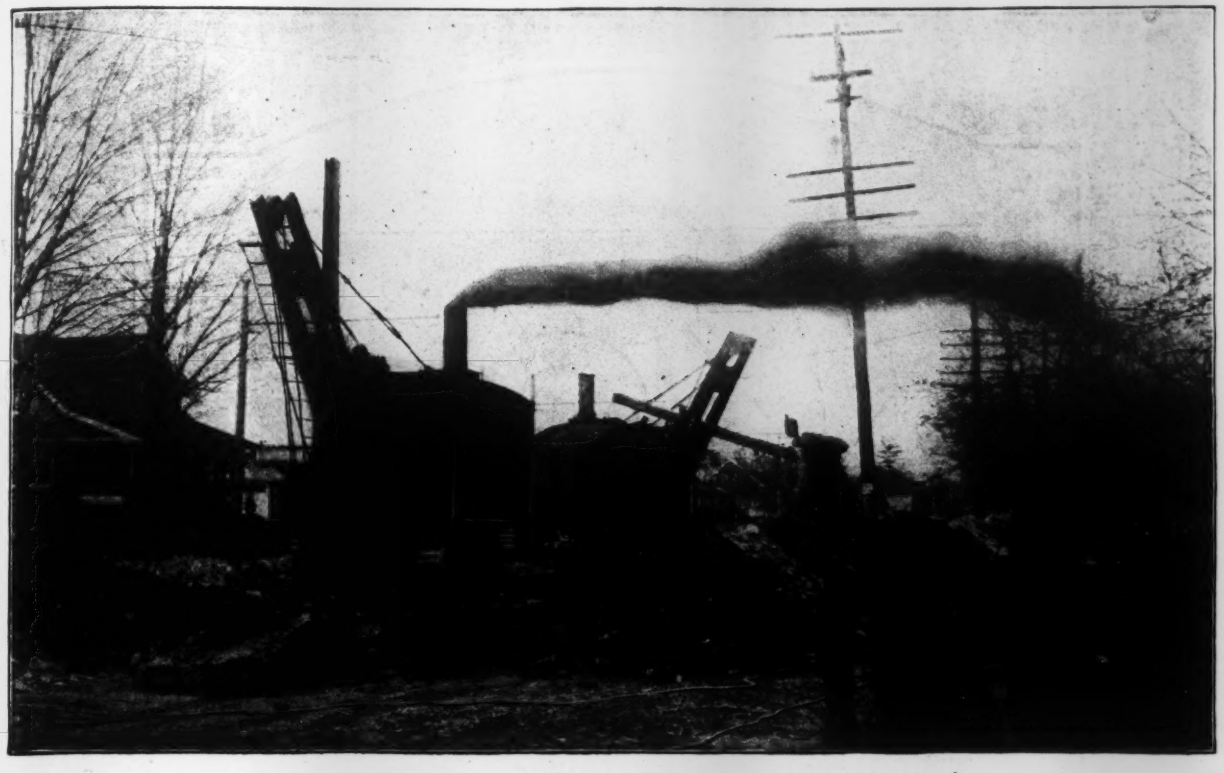
Established in 1880

Railroad Type and Revolving Shovels of All Sizes, Dragline Excavators, Trench Excavators, Dipper, Hydraulic and Placer Dredges, Spreader Plows, Wrecking Cranes, Etc.

Bucyrus Company, South Milwaukee, Wis.

New York Chicago Birmingham San Francisco Portland Denver Tokyo London

Special Plant at Evansville, Ind., Devoted Exclusively to SMALL REVOLVING SHOVELS



Team Work

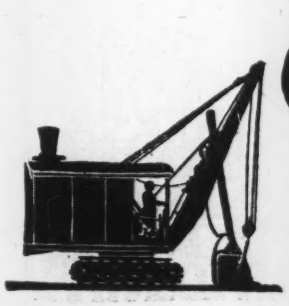
These two Thews made quick work of a sewer trench through solid rock. One removed the pavement and overburden, the other followed in the rock digging and grading. Working together they advanced at the rate of 60 feet per day digging a 6 foot wide by 15 foot deep trench. And the shovels are only ¾ yard Type O Thews at that.

They are owned by K. P. McMahon and Gantose Construction Company, of Cleveland. The one on the follow up, owned by Gantose, not only shovels but digs the rock with the aid of an occasional pot shot to start it.

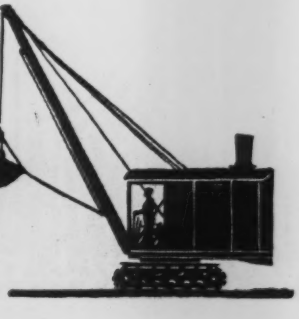
Ask either owner what they think of Thews. Mr. Gantose states that prior to this job he worked his Thew in rock digging for 300 consecutive days and his total repair expense amounted to less than 4 cents per day. He further states, "That shovel doesn't owe me a cent. It's as good as new yet, but I could scrap it right now and figure that I had more than my money's worth."

That is how owners everywhere talk about their Thews—Isn't that how you want to talk? You will if you use a Thew.

THE THEW SHOVEL COMPANY, LORAIN, OHIO



Thew
Power Shovels



In Forty States and Every Province

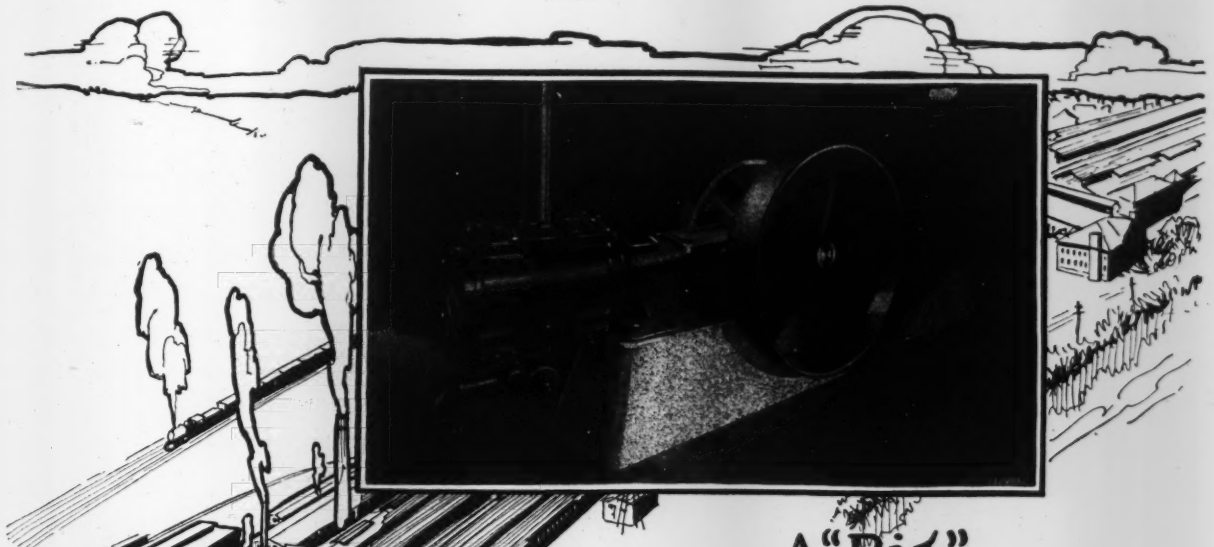
WE have built and installed pipe in forty of the forty-eight states of the Union and in every one of the provinces of Canada.

In practically every instance, this has meant that we have manufactured at the spot, necessitating that we have faced nearly every type of local condition as regards materials, transportation, labor, topography and climate. We have operated in Canada on the North and Florida on the South; in Washington on the West and Virginia on the East; and in Colorado in the middle.

Such wide experience is of vital importance when it is a matter of pipe which is to be permanent — to function thirty, sixty, a hundred years.

LOCK JOINT PIPE CO., 9 Rutledge Ave., Ampere, N. J.

LOCK JOINT
Reinforced
Concrete Pipe



A "Big" Little Air Compressor

—*for*

Pneumatic Drilling, Grinding, Chipping and Riveting; Air Hoists; Car and Locomotive Repair Shops; Foundries; Forges for Heating Rivets; Paint Sprays, Etc.

By "big", we mean it contains all the fine points that are embodied in the construction of the larger and more famous members of the Ingersoll-Rand family of air compressors. The running parts are enclosed. Removable covers afford instant access for inspection. Running parts and main bearings are lubricated by an automatic flood system. The inlet and discharge valves are of the Ingersoll-Rand plate type, with large valve area and noiseless in operation. Reliable regulators automatically load and unload compressor.

These Small Air Compressors are built in two classes, —Class "ER" (belt driven) as shown above, and Class "FR" (steam driven). Both are straight line, single stage units.

Every I-R Branch Office and Service Station has competent engineers who will gladly co-operate with you in selecting compressor equipment that will prove the most economical for your requirements.

Let us send you bulletin No. 3050. It is new.

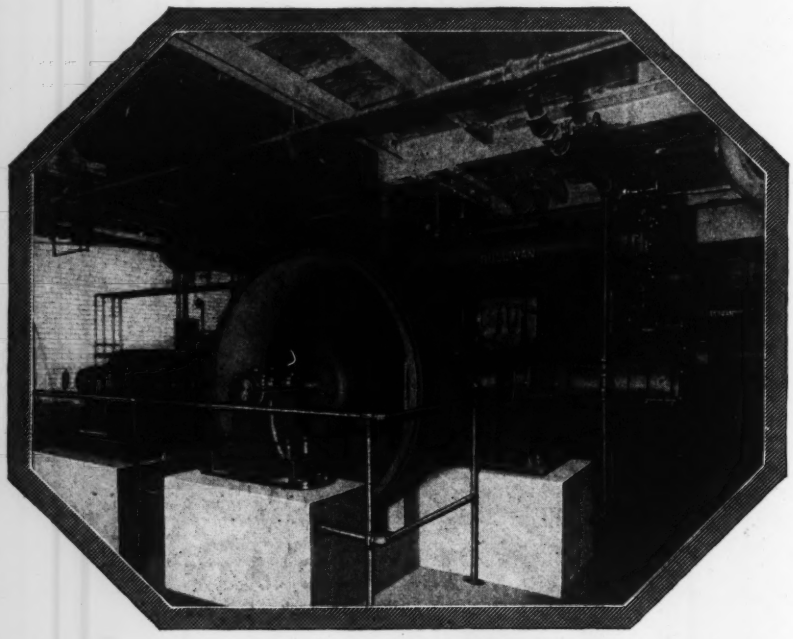
INGERSOLL-RAND COMPANY
11 BROADWAY, NEW YORK

Offices in All Principal Domestic and Foreign Cities

For Canada refer Canadian Ingersoll-Rand Co., Limited
260 St. James St., Montreal

776-C

Ingersoll-Rand



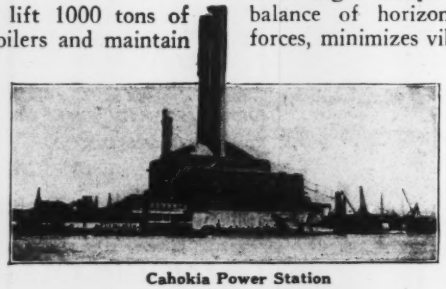
Compressed Air Transports Powdered Coal at Cahokia Station

COMPRESSED Air Transport is the novel method employed at the Cahokia Station of the Union Electric Light & Power Co., East St. Louis, Illinois (McClellan & Junkersfeld, Inc., Engineers and Constructors), for elevating the powdered coal to the overhead bunkers above the boilers. From that point the coal is delivered to the feeders by gravity and blown into the furnaces.

The total lift is 160 feet.

Some conveying problem to lift 1000 tons of coal a day for eight 1800-hp. boilers and maintain a steady and adequate supply.

The problem was solved by the engineers by using compressed air at 100 lbs. pressure. For this purpose they installed **3 Sullivan Angle Compound Compressors,** size 20-12x14, short belt connected to motors. One unit is maintained as a standby in case of emergency.



Cahokia Power Station

Angle Compounds are noted for their ability to render year-in-year-out continuous service. Equipped with "wafer" air valves, force feed plus gravity lubrication, and Sullivan automatic load control, they require the minimum of attention and care, and practically take care of themselves over long periods.

The angle compound design, with its accurate balance of horizontal and vertical reciprocating forces, minimizes vibration, reduces wear, and holds down power input per 100 cu. ft. of free air to a remarkably low point.

Angle compounds are built in single units from 400 to 1,700 cu.ft. capacity; in twin units to 2,700 cu.ft. for belt drive or direct motor connection.

Ask for new Catalog No. 477H

DOMESTIC SALES OFFICES

Birmingham, Boston, Butte, Claremont, N. H., Cleveland, Dallas, Denver, Duluth, El Paso, Huntington, W. Va., Joplin, Juneau, Knoxville, New York, Pittsburgh, St. Louis, Salt Lake, San Francisco Spokane.

COMPRESSORS AID LIFT DIAMOND DRILLS SHARPENERS FORGES
FORGE HAMMERS COAL CUTTERS ROCK DRILLS DRILLING CONTRACTORS

SULLIVAN
TRADE MARK
MACHINERY COMPANY
124 So. Michigan Ave. Chicago.

FOREIGN SALES OFFICES

Algiers, Brussels, Calcutta, Christiania, Durban, Natal, Havana, Lima, London, Madrid, Mexico City, Paris, San Juan, Santiago, Shanghai, Sydney, N. S. W., Tokyo, Toronto, Tunis, Turin, Vancouver.

GOLDEN-ANDERSON

Patent Automatic Cushioned Controlling Float Valves

They carry a constant water level in feed water heaters by perfectly controlling the flow of makeup water.

Operated by protected enclosed copper float.

Cushioned by both air and water.

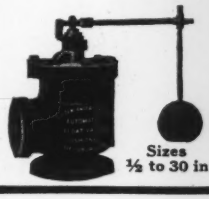
Operate without hammering, sticking or chattering. No metal-to-metal seats. Made angle or straightway.

Sizes 1 in. to 30 in.

GOLDEN-ANDERSON

Pat. Automatic Cushioned Water Float Valves

1. Automatically Maintain Uniform Water Levels in Tanks, Standpipes, etc.
2. Instantly Adjusted to Operate Quickly or Slowly.
3. Floats Swivel to any Angle—Most Satisfactory Float Valves Known.
4. No Metal-to-Metal Seats—No Water Hammer or Shock.
5. Cushioned by Water and Air.

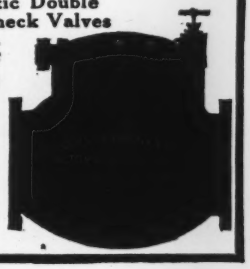


Sizes ½ to 30 in.

GOLDEN-ANDERSON

Pat. Automatic Double Cushioned Check Valves

1. Especially adapted for Water Service.
2. For High or Low Pressure.
3. Thoroughly Cushioned, No chattering, Hammering, or Sticking.
4. Globe or Angle Patterns up to 30 in.
5. Especially adapted for hydraulic elevator service.



GOLDEN-ANDERSON

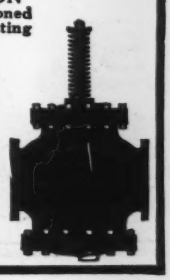
Pat. Cushioned Water Relief Valves

1. Automatically relieve excess pressure.
2. Prevent stress, strain and bursting of mains.
3. Correct mechanical construction.
4. Perfect air and water cushioning.
5. No metal-to-metal seats. No hammering or shocks.
6. Angle and globe pattern. Sizes 3 to 30 in.

GOLDEN-ANDERSON

Pat. Automatic Cushioned Water Pressure Regulating Valves

1. Maintain a constant reduced pressure regardless of fluctuations on high pressure side.
2. Perfectly Cushioned by water and air. No metal-to-metal seats.
3. The best valve made for maintaining a constant low pressure where consumption is continuous.
4. Operates quickly or slowly as required—No attention necessary.
5. Positively no hammering or sticking. Sizes to 24 in.



For even pressure throughout the entire system—

Golden-Anderson

Patent Automatic *"Cushioned"* Controlling Altitude Valves

These five features are GUARANTEED

1. They keep the water level constant in reservoirs, standpipes, tanks, etc., under all conditions.
2. Very simple in design. Contain no floats or fixtures inside or outside of tanks.
3. A perfect cushion by water and air absolutely prevents water hammer, surges and broken mains. No metal-to-metal seats.
4. Can be closed in three ways, by hand, or automatically by water if a pipe breaks and by electricity from distant points.
5. When desired can be connected to work "both ways" on a single pipe line.

"Made with Stop-Starter Attachment for Centrifugal Pumps."

Full details on request. Write us.

Golden-Anderson Valve Specialty Co.,
1202 Fulton Bldg., Pittsburgh, Pa.

"One of the famous Coffin Products"

Investigate Dow Disc-Arm Pivot Valves

These are our new type butterfly valves, with arm on the disc. Tests show them practically as tight as gate valves. For free discharge under 110 ft. head. Velocity thru valves 85 ft. per second. The photograph shows two of these valves bolted together for testing.

Not long ago we shipped six 72-inch, electrically operated, Dow Disc-Arm Pivot Valves for the United Hudson Electric Corporation, Sturgeon Pool Development. Under the supervision of the J. G. White Engineering Corporation.

Patent applied for

COFFIN VALVE COMPANY,

Makers of the largest Sluice and Gate Valves in America

Check Valves
Flap Valves
Foot Valves
Sewer Gates

Office and Works, Neponset, Suburb of

BOSTON, MASS.,

Sluice Gates
Gate Valves
Butterfly Valves
Fire Hydrants

REPRESENTATIVES:

New York City: C. W. Bergen & Co., 50 Church St.
Philadelphia, Pa.: DeHuff & Hopkins, Morris Building
Cleveland, Ohio: Tomlinson Steam Specialty Co., 1597 St. Clair Ave.
San Francisco, Cal.: Theo. F. Dredge, Monadnock Building
Toronto, Ont.: The Arthur S. Leitch Co., Ltd., 1001 Kent Building
Montreal, Que.: Sterling Engineering Co., 232 St. James St.

LaSalle Hotel Garage, Chicago—Geo. A. Fuller Co., General Contractors

An Exacting Job—

IN ORDER that the business of this garage might go on without interruption, the reinforcing had to be delivered on the job before 9 A.M. each day as needed. Where the new addition connected to the old building it was necessary for us to send a draftsman to take actual measurements as each part of the old structure was exposed. We then prepared our details, cut and fabricated the reinforcing and made delivery the following morning.

This is but one example of the service we are prepared to give in addition to furnishing everything required in concrete reinforcement. We carry complete stocks of bars, mesh, etc., and can fabricate to any specifications. Get our price—it will save you money and worry too.

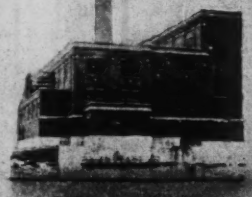
Write for booklet—"Reinforcing for Concrete"—it is yours for the asking

JOSEPH T. RYERSON & SON INC.
ESTABLISHED 1842

PLANTS: CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK
BRANCH OFFICES: DENVER HOUSTON JERSEY CITY
MILWAUKEE MINNEAPOLIS NEWARK SAN FRANCISCO TULSA

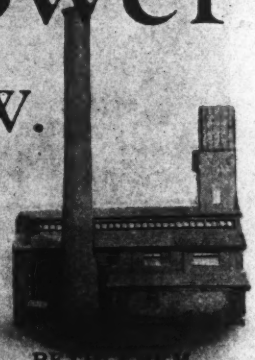
Industrial Power

500 KW. TO 12000 KW.



PITTSBURGH PLATE GLASS COMPANY

ST. JOSEPH LEAD CO.



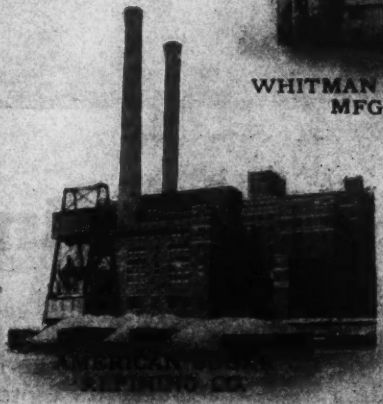
BETHLEHEM STEEL COMPANY

WESTINGHOUSE LAMP COMPANY

WHITMAN & BARNES MFG. CO.

THE MANHATTAN RUBBER MFG. CO.

MERRIMAC CHEMICAL CO.



AMERICAN [illegible] REFINING CO.

PIERCE-ARROW MOTOR CAR CO.

BOSTON WOVEN HOSE AND RUBBER CO.

REMINGTON ARMS AND AMMUNITION CO.

DESIGN · BUILD
MANAGE
FINANCE

STONE & WEBSTER

INCORPORATED

BOSTON PHILADELPHIA NEW YORK SAN FRANCISCO. CHICAGO

You don't sign the dotted line

WHEN YOU SIGN a contract with the Linde Company, you don't sign the dotted line, but the line of no trouble.

A Linde contract means all the oxygen you need whenever you need it. It is a contract for dependable delivery. And Linde delivery is dependable because its 115 plants and warehouses are backed by a will to serve, without which, ability to deliver would be useless to you.

A contract with Linde also includes help in the efficient use of your oxy-acetylene apparatus. A part of this help is given monthly in "Oxy-Acetylene Tips." Write for it.

THE LINDE AIR PRODUCTS COMPANY
General Offices: Carbide & Carbon Bldg.
30 East 42d Street, New York
38 PLANTS—77 WAREHOUSES

A Linde Text Book

The index to "Gas Welded Pipe Joints" reads like that of a text book—and that's what it is.

• • •

This book covers welding costs, cutting costs, laying costs, pipe line total costs, pipe pattern cutting, etc. It has more than fifty pages chock full of instructions, information, tables, diagrams, and illustrations.

• • •

It is a text book, indeed, published by the Linde Air Products Company as a part of Linde Service.

• • •

"There has been such a call for detailed information with regard to the costs of welded pipe installations of various kinds, that it has led to the compilation of the data which make up this book"—from the Preface to "Gas Welded Pipe Joints."

• • •

All books written and published by the Linde Company are to supply definite needs. And the needs of customers come to the attention of Linde through its practical field service to customers.

• • •

Any Linde user may secure a copy of "Gas Welded Pipe Joints" or information regarding all Linde books from the nearest Linde District Sales Office.

LINDE OXYGEN

YOU CAN DEPEND ON THE LINDE COMPANY

WESTINGHOUSE ELECTRIC

Westinghouse

Has Proved their Worth

The crane in the illustration is one of the No. 4 Brownhoists owned by the Westinghouse Electric & Mfg. Co. This crane is in use at the Trafford, Pa. plant.

The Westinghouse Electric and Manufacturing Co. is a recent addition to the long list of industrial leaders who have bought one Brownhoist crane, proved its worth, and expressed their satisfaction by purchasing additional Brownhoists.

There are definite reasons why such companies as Westinghouse have chosen Brownhoist cranes. The high rate that these machines return on the capital invested, their wide range of adaptability to all types of handling service and their ability to stand up on the hardest kind of work, are but a few of the influencing factors.

The time and labor saving possibilities, lower maintenance and operating costs and longer life of Brownhoist equipment, make it the logical selection for those plants in which high economy standards are maintained.

May we tell you of plants with conditions similar to your own that are using Brownhoists successfully? May we help you in the solution of your material handling problems as we have helped Westinghouse and others?

The advice of our engineers is available without cost or obligation. Just write us for further information.

The Brown Hoisting Machinery Company, *Cleveland, Ohio*

Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans, London, Eng.

BROWNHOIST

MATERIAL HANDLING MACHINERY

OFFICIAL PROPOSALS

Bids: July 7

Plumbing

NURSES' HOME AND EMPLOYEES' DORMITORY
White Plains, N. Y.

Sealed bids will be received for labor and material for plumbing work of the Nurses' Home and Employees' Dormitory on premises at Grasslands Hospital, in the Town of Mount Pleasant, County of Westchester and State of New York, at the office of the Clerk of the Board of Supervisors, at the Court House, White Plains, New York, until eleven o'clock a.m. (Daylight Saving Time), July 7th, 1924.

Specifications, drawings and all information relative to the same may be procured either from Walker & Gillette, Architects, No. 128 East 37th Street, New York City, or from Fred L. Merritt, Clerk of Board of Supervisors, Court House, White Plains, N. Y., on making a deposit of the sum of Ten dollars ($10.00), Five dollars ($5.00) of which will be returned to the bidder making such deposit upon returning such plans and specifications to the Clerk of the Board of Supervisors within ten days after the opening of bids for such work. Each bid or proposal must be accompanied by a certified check in the sum of three per cent (3%) of the amount bid made payable to the Treasurer of the County of Westchester, same to be forfeited to the County of Westchester as liquidated damages in the case of failure on the part of the successful bidder to enter into a contract for the execution of the work awarded to him and to furnish a satisfactory bond within five days after notice of such award. The successful bidder will be required to execute the contract and furnish a surety company bond in a sum equal to fifty per cent of the amount of the contract awarded to him guaranteeing the faithful performance of the work, said contract and bond to be in the form required by the County Attorney.

The Board of Supervisors reserves the right to reject any and all bids, or to accept any proposal which it may deem for the best interest of the County of Westchester.

BOARD OF SUPERVISORS.
By FRED L. MERRITT, Clerk.
Dated, White Plains, N. Y., June 16th, 1924.

Bids: July 10.

Road Work

New Brunswick, N. J.

Notice is hereby given that sealed bids will be received by the Board of Chosen Freeholders of Middlesex County for the construction of Old Bridge-Matawan Road in the Township of Madison, in the County of Middlesex, with a reinforced concrete pavement, estimated amount of concrete pavement required is 56,712 square yards, and opened and read in public at the County Record Building, New Brunswick, N. J., on July 10, 1924, at 2.30 p.m. Standard Time.

Drawings, specifications and forms of bid, contract and bond for the proposed work, prepared by Morgan F. Larson, County Engineer, and approved by the State Highway Commission, have been filed in the office of said Engineer at 175 Smith Street, Perth Amboy, N. J., and of said State Highway Commission, Trenton, N. J., and may be inspected by prospective bidders during business hours. Bidders will be furnished with a copy of the specifications and blue prints of the drawings by the Engineer on proper notice and payment of cost of preparation. Bids must be made on the Standard Proposal forms in the manner designated therein and required by the specifications, must be enclosed in sealed envelopes, bearing the name and address of the bidder and name of road on the outside, addressed to the Board of Chosen Freeholders of Middlesex County, and must be accompanied by a certificate of a Bonding Company agreeing to furnish bond in the amount of 100% of the Contract, and a certified check for not less than ten (10) per cent of the amount bid, provided said check shall not be less than $500.00 nor more than $20,000.00, and be delivered at the place and on the hour above named. The standard proposal form is attached to the specifications, copies of which will be furnished on application to engineer.

By order of the Board of Chosen Freeholders of Middlesex County.
THOMAS J. MULVIHILL,
Clerk.

OFFICIAL PROPOSALS

Bids: July 7.

Garage and Dairy Barn

White Plains, N. Y.

Notice to Contractors—Including Plumbing and Heating Contractors.

Separate sealed bids or proposals for the following work:

(a) For the erection and completion and electrical work (exclusive of plumbing and heating) of Garage and Dairy Barn required in connection with the County Hospital in the Town of Mount Pleasant, County of Westchester and State of New York, and known as Grasslands Hospital.

(b) For the plumbing work required for Garage and Dairy barn.

(c) For the heating work required for Garage and Dairy Barn; will be received at the office of the Clerk of the Board of Supervisors at the Court House, White Plains, New York, until eleven o'clock a.m. (D. L. S.), Monday, July 7, 1924. Specifications, drawings and all information relative to the same may be procured either from Walker & Gillette, Architects, of No. 128 East 37th Street, New York City, or from Fred L. Merritt, Clerk of the Board of Supervisors, Court House, White Plains, N. Y., on making a deposit of the sum of Ten Dollars ($10.00), Five Dollars ($5.00) of which will be returned to the bidder making such deposit upon returning such plans and specifications to the Clerk of the Board of Supervisors within ten days after the opening of bids for such work. Each separate bid or proposal must be accompanied by a certified check in the sum of three per cent of the amount bid, made payable to the Treasurer of the County, same to be forfeited to the County of Westchester as liquidated damages in the case of failure on the part of the successful bidder to enter into a contract for the execution of the work awarded to him and to furnish a satisfatcory bond within five days after notice of such award. Each successful bidder will be required to execute the contract and furnish a surety company bond in a sum equal to fifty per cent of the amount of the contract awarded to him guaranteeing the faithful performance of the work, said contract and bond to be in the form required by the County Attorney.

Pursuant to the provisions of the statutes, separate bids must be submitted for items (a), (b) and (c). No bid will or can be considered that combines any two or more of such items.

The Board of Supervisors reserves the right to reject any and all bids, or to accept any proposals which it may deem for the best interest of the County of Westchester.

Dated, White Plains, N. Y., June 19, 1924.

BOARD OF SUPERVISORS.
By FRED L. MERRIT,
Clerk.

Bids: June 30.

Plumbing

White Plains, N. Y.

NOTICE TO PLUMBING CONTRACTORS.

Sealed bids or proposals for additional plumbing to be installed in the County Jail, adjoining the Westchester County Court House, at White Plains, N. Y., will be received at the office of the Clerk of the Board of Supervisors, Court House, White Plains, N. Y., until 11 o'clock a.m. (Daylight Saving Time), June 30th, 1924.

Plans and specifications and all information relative to the same may be procured from the County Superintendent of Buildings, Court House, White Plains, N. Y.

Each proposal must be accompanied by a certified check in the sum of 5 per cent of the amount bid, made payable to the Treasurer of the County of Westchester, same to be forfeited to the County of Westchester, as liquidated damages in case of failure on the part of the successful bidder to enter into a contract for the execution of the work awarded to him and to furnish a satisfactory bond within 5 days after notice of such award.

The successful bidder will be required to execute the contract and furnish a Surety Company bond in a sum equal to 50 per cent of the amount of the contract awarded to him, guaranteeing the faithful performance of the work, said contract and bond to be in the form required by the County Attorney. The board of supervisors reserves the right to reject any and all bids, or to accept any proposal which it may deem for the best interest of the County of Westchester.

BOARD OF SUPERVISORS,
By FRED L .MERRITT, Clerk.

OFFICIAL PROPOSALS

Bids: July 9.

REINFORCED CONCRETE SUPERSTRUCTURE AND PILE FOUNDATIONS FOR SOUTH PARK BOULEVARD VIADUCT

South Park Commissioners

Chicago, Ill.

Sealed proposals will be received by the South Park Commissioners, 57th Street and Cottage Grove Avenue, until 12:00 o'clock noon, Wednesday, July 9, 1924, for the complete construction of Reinforced Concrete Super-Structure for the "South Park Boulevard Viaduct," and the East and West Approach Structures and the Pile Foundations for the West Approach, in accordance with drawings and specifications, copies of which may be obtained at the office of the Consulting Engineers, Condron Company, on and after June 20, 1924, upon depositing therefor the sum of $50.00 for the complete set or for the set of "Item B," and the sum of $25.00 for the set of any one item except "Item B," which deposits will be returned to bidders upon return of drawings and specifications.

Proposals must be enclosed in opaque sealed envelopes marked "Proposal" and bearing title of the work bid upon, and the name of bidder.

The right is reserved to reject any or all bids, or to accept any bid or "item" of any bid which, in the judgment of the Commissioners, will be for the best interest of the public.

Any one of the following "items" of the work may be bid upon, and separate contracts or a general contract may be let, at the option of the Commissioners:

Item (A)—Piling and Footings. (In specification No. 3.)

Item (B) — Concrete Super-Structure. (Specification No. 3.)

Item (C)—Gunite Protection of Steel. (Specification No. 4.)

Item (D) — Waterproofing Walls and Decks. (Specification No. 5.)

Item (E)—Drains and Sewers. (Specification No. 6.)

Item (F)—Electric Conduits, Wiring and Ornamental Lamp Posts. (Specification No. 7.)

Item (G)—Ornamental Concrete. (Specification No. 8.)

Each proposal should be accompanied by a certified check for a sum not less than five (5%) per cent of amount of proposal, payable to South Park Commissioners, as a guarantee of the good faith of the bidder, which check will be returned to the bidder unless forfeited under conditions stipulated in proposal.

Proposals shall be made on "Proposal Form" accompanying specifications.

ELMER J. WHITTY,
Secretary.

Bids: August 4.

Morwell Power Scheme

SPECIFICATION NO. 24/25
STATE ELECTRICITY COMMISSION OF VICTORIA

Melbourne, Victoria, Australia.

Tenders are hereby invited for the supply, delivery, etc., of the following for the Morwell Power Scheme.

Copies of Tender Form and Specification will be available upon application to:

Office of the Bureau of Foreign & Domestic Commerce, United States Department of Commerce, Room 830, 76 West Monroe St., Chicago, and Office of the Bureau of Foreign & Domestic Commerce, United States Department of Commerce, 734 Customs House, New York City.

SPECIFICATION NO. 24/45—66,000-VOLT INSULATORS

CHARGE: £2 2s. 0d. for the first three copies of Tender Form, Conditions of Contract and Specification complete. This charge will be returned on receipt of a bona fide tender. A fourth copy and any further copies will be supplied for the sum of 10s. 6d. each. This charge is not returnable.

PRELIMINARY DEPOSIT: A Preliminary Deposit of £50 0s. 0d. is to be lodged with Tender.

The Specification may be inspected at the above mentioned offices.

The Commission does not bind itself to accept the lowest or any tender.

Tenders on prescribed form, properly endorsed and addressed, must be delivered to the undersigned in Melbourne not later than 5 p.m. on August 4, 1924.

R. LIDDELOW,
Secretary.

OFFICIAL PROPOSALS

Bids: July 9.

Boulevard Construction

Atlantic City, N. J.

Sealed bids will be received by the Board of Chosen Freeholders of Atlantic County, N. J., at 12 o'clock, noon, (Daylight Saving Time), on July 9th, 1924, during a regular meeting of said Board at its Assembly Room in the Guarantee Trust Bldg., Atlantic City, N. J., for reconstruction of a certain County Road, known as the Absecon Boulevard, joining Absecon and Atlantic City with a standard, sheet-asphalt pavement on a 6", 1-3-5, concrete base; the approximate area of the sheet asphalt being 104,800 sq.yds. and of the concrete base 109,000 sq.yds., together with gravel shoulders, excavation and embankment, drainage provisions, reconstructed guard rail, additions to 9 existing bridges and other incidental construction items. The bids will be opened and publicly read at the aforesaid time and place.

Plans, specifications and forms of bid, certificate of surety, contract and bond, covering the proposed work, are on file at the offices of the State Highway Commission in Broad St. Bank Bldg., Trenton, N. J., and at 503 Market St., Camden, N. J., and at the office of the County Engineer of Atlantic County, 741 Guarantee Trust Bldg., Atlantic City, N. J. At any of the above offices the plans and specifications may be inspected and a prospective bidder may secure a printed copy of the specifications and blueprints of the plans from the office of the County Engineer in consideration of a deposit of $10.00 which will be refunded provided the plans and specifications are returned to the office of the County Engineer, in good condition, by noon of July 9th, 1924, (Daylight Saving Time); otherwise the plans and specifications will become the property of the prospective bidder and the deposit will be forfeited. Each bid must be made on the standard proposal form in the manner required by the specifications and must be accompanied by a certified check, or cash, in the amount of $20,000. A satisfactory bond in the full amount of the contract price will be required of the contractor and a contract will be awarded, if awarded at all, within one month of the date of receiving bids, but such award will be made subject to the sale and delivery of bonds to be issued for the purpose of financing the work; the award of contract will also be subject to approval by the State Highway Commission.

The right is reserved to reject any or all bids.

By Order of the Board of Chosen Freeholders of Atlantic County, N. J.

F. W. WILLETTS, Clerk.

Bids: July 15.

Subway Construction

DEPARTMENT OF CITY TRANSIT
CITY OF PHILADELPHIA
11TH FLOOR, 1211 CHESTNUT STREET
Philadelphia, Pa., June 9, 1924.

Sealed Proposals, addressed to the undersigned, at the offices above mentioned, will be received until 11 o'clock a.m., (Eastern Standard Time), on Tuesday, July 15, 1924, and publicly opened and read immediately thereafter, for construction of about 10,131 linear feet of 4-track subway in Broad Street, from north of Stiles Street to the south side of Clearfield Street.

Plans and Specifications can be seen at the office of the Department on the 12th floor, 1211 Chestnut Street, and copies of same, with blank forms for proposals, will be supplied to intending bidders upon deposit of $50.00, which will be refunded upon return of the Plans and Specifications in good condition.

Bidders must be skilled and regularly engaged in the class of work for which they are competing.

No bid will be considered unless accompanied by a certified check on a responsible Bank or Trust Company in favor of the City of Philadelphia, to the amount of five (5) per centum of the sum of such bid, in accordance with the provisions of an ordinance approved March 7, 1924, and reprinted in full in the Specifications.

Proposals will be received upon the entire work, designated as Contract No. 105, and separately upon approximately equal sections of the work designated as Contracts No. 105-A and No. 105-B respectively.

The Director reserves the right to contract for the work as a whole or in two sections, and to reject any or all bids, as he may deem best for the interest of the City of Philadelphia.

H. E. EHLERS,
Director.

OFFICIAL PROPOSALS

Bids: July 9.

Highway Work

STATE OF MARYLAND
STATE ROADS COMMISSION
Baltimore, Md.

Sealed proposals for building nine sections of State Highway, as follows:

Montgomery Co. Cont. M-52. One section of State highway from Colesville toward Ashton for a distance of 1.0 mile. (Concrete.)

Montgomery Co. Cont. 169-8. One section of State highway from Kensington to Chevy Chase Lake, a distance of 2.03 miles. (Concrete shoulders.)

Prince George's Co. Cont. P-53. One section of State highway from Bladensburg to East Riverdale, a distance of 2.0 miles. (Concrete.)

Howard Co. Cont. Ho-48. One section of State highway from end of Cont. Ho-42 to Jonestown, a distance of 1.3 miles. (Concrete.)

Howard Co. Cont. Ho-25. One section of State highway between West Elkridge and Millers Corner, for a distance of 1.48 miles. (Concrete.)

Baltimore Co. Cont. B-12-C. One section of State highway through Catonsville, for a distance of 0.46 mile. (Concrete.)

Queen Anne's Co. Cont. Q-30. One section of State highway from Centerville to Centerville Landing, a distance of 0.7 mile. (Concrete.)

Cecil Co. Cont. Co-39. One section of State highway between Calvert and Fade Hill for a distance of 1.0 mile. (Concrete.)

Calvert Co. Cont. C-17. One section of State highway from Huntingtown toward Plum Point for a distance of 1.5 miles. (Gravel.)

will be received by the State Roads Commission, at its offices, 601 Garrett Building, Baltimore, Maryland, until 12 M. on the 8th day of July, 1924, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form, which, with specifications and plans will be furnished by the Commission upon application and cash payment of $1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred ($500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 19th day of June, 1924.

JOHN N. MACKALL,
Chairman.

L. H. STEUART, Secretary.

Bids: July 8.

Pavements—Concrete and Bituminous Bound Macadam

Wallingford, Conn.

Notice is hereby given that sealed bids will be received by the Court of Burgesses of the Borough of Wallingford, Connecticut, New Haven County, for the construction of the following estimated pavements:

1,200 sq.yds. of concrete pavement.
5,950 sq.yds. of Bituminous Bound Macadam (Penetration method).
4,135 lin.ft. of combined concrete curb and gutter.
450 lin.ft. of blue stone curbing.
145 sq.yds. concrete gutters.

A certified check for 5% of the contract shall accompany each proposal and a Surety Co. bond of 50% of the contract price will be required of the successful contractor.

Bids will be opened and read in public at the Borough Clerk's office on Tuesday, July 8th, 1924, at 6 p.m., standard time. Forms of Proposals, specifications and contract for the proposed work may be secured from Wm. A. MacKenzie, Borough Engineer, Wallingford, Conn.

The Court of Burgesses reserves the right to reject any or all proposals or to accept any proposal for one or more sections or for the concrete curbs and gutters as a separate unit.

Signed, JOHN P. BRIDGETT,
Warden.

WM. A. MACKENZIE, C. E.

OFFICIAL PROPOSALS

Bids: July 14.

Sewage Treatment Works and Appurtenances

Borough of Bergenfield, N. J.,
Borough of Dumont, N. J.

The Mayor and Council of the Boroughs of Bergenfield and Dumont, Bergen County, New Jersey, request proposals for the construction of a Sewage Treatment Works and Appurtenances.

The foregoing works are more particularly described and set forth in the plans and specifications on file with Thomas F. Bowe, Consulting Engineer, and with the Borough Clerks.

The plan and specifications, form of proposals, contracts, form of bonds required may be seen at the offices of Thomas F. Bowe, Consulting Engineer, 110 William Street, New York City. Copies of such plans and specifications may be obtained on making a deposit of twenty-five dollars ($25.00) (cash or certified check), fifteen dollars ($15.00) of which deposit will be refunded upon return of the plans and specifications five (5) days after the receipt of proposals complete and in good condition.

All bids must be made upon a form of proposal to be obtained from the Consulting Engineer and must give the prices both in writing and figures and must give such other information and be signed in the manner indicated by the form of proposal. Each bid must be accompanied by a certified check on some solvent bank; in the amount of five (5%) per cent of the bid price. The certified checks shall be made payable to the Boroughs of Bergenfield and Dumont; checks of the unsuccessful bidders will be returned immediately upon the award of the contract. The check of the successful bidder will be returned to the bidder upon the execution of the contract and the furnishing of the bond required, within ten days after the date of the award thereof, or within such extended time as may be determined by the Borough Councils. In case of failure to execute the required contract and furnish the required bond within such time, such check shall be forfeited to the Boroughs of Bergenfield and Dumont as liquidated damages.

The proposals hereing required shall be presented to the Mayor and Council of the Boroughs of Bergenfield and Dumont, Bergen County, New Jersey, at the Council Chamber, Madison Avenue, Dumont, Bergen County, New Jersey, on Monday, July 14, 1924, at 8:00 p.m. Daylight Saving Time. No bids will be received prior to said hour and none thereafter. The proposals shall be submitted in sealed envelopes or packages and endorsed respectively as follows:

Proposal for the construction of a Sewage Treatment Works and Appurtenances.

The right is expressly reserved to reject any or all bids, to waive any informality in the bids received and to accept any bid which is deemed the most favorable to the interests of the Boroughs of Bergenfield and Dumont, Bergen County, New Jersey.

Dated June 16, 1924.

Mayor and Council of the Borough of Bergenfield, N. J.
By OTTO E. DOLAINSKI,
Borough Clerk.

Mayor and Council of the Borough of Dumont, N. J.
By HENRY J. BERSCH,
Borough Clerk.

THOMAS F. BOWE,
Consulting Engineer.

Bids: June 30.

Sanitary Sewers

TOWN OF ADAMS
OFFICE OF SELECTMEN
Adams, Mass.

Sealed proposals addressed to the Board of Selectmen, Adams, Mass., and endorsed "Proposal for Sanitary Sewer Construction" will be received by the Board of Selectmen at its Office until 4 p.m., Monday, June 30, 1924, and at that time and place will be publicly opened and read.

Work includes furnishing all labor and material and constructing approximately two miles of sanitary sewers in sizes ranging from eight inches to twenty-two inches.

Plans may be seen and forms of specifications and contract may be obtained at the office of the Selectmen.

Each bid must be accompanied by a certified check for two thousand dollars ($2,000.00) payable to the Town of Adams.

Board of Selectmen, Town of Adams.
By H. L. HARRINGTON.
D. A. MURPHY.
A. F. BAILOT.

OFFICIAL PROPOSALS

Bids: July 3.

Channel Dredging

DEPARTMENT OF PUBLIC WORKS
Buffalo, N. Y.

Sealed proposals for work and supplies as set forth below, will be received at the office of this Department, Room 5 Municipal Building, until 11 o'clock a.m., July 3rd, 1924.

No proposal will be considered unless it be accompanied by a certified check, payable to the order of the Department of Public Works, in the amount specified in specifications or by a bond conforming to law; such bonds to be fifty per cent of the sum named in the proposal.

Plans and specifications and estimate of quantities can be seen, and printed forms of proposals, and any desired information, can be had on application at the Bureau of Engineering on and after this date.

This Department reserves the right to reject any and all bids, and to waive any informalities.

A separate proposal must be made for the work and supplies included in each descriptive paragraph following:

RE-ADVERTISEMENT

For the completion of subdivision "B" of Section No. 2 of the Buffalo River and Cazenovia Creek Improvement, including the channel of Buffalo River from the westerly line of Babcock street to the westerly line of Seneca street and the channel of Cazenovia Creek from the Buffalo River channel to about 100 feet easterly of South Park avenue.

Work consists in the removal of about 950,000 cubic yards of earth excavation.

Bid and contract will be on a price per cubic yard place measurement.

Formal advertisement will be found in the Buffalo Commercial, Buffalo Express and Buffalo Times on June 13th, 14th, 20th and 21st, 1924.

This is not a complete formal advertisement.

Bids: July 1.

Bridge

Norristown, Pa.

Sealed proposals will be received at the office of the County Controller, Court House, Norristown, Penna., on July 1, 1924, at 10 o'clock Standard Time and opened at 11 o'clock Standard Time for furnishing tools, machinery, labor and materials necessary for the construction complete of a reinforced concrete bridge over the Schuylkill River on DeKalb Street, between Norristown and Bridgeport, Montgomery County, Penna., in full accordance with plans and specifications on file in the office of the County Commissioners.

The bridge consists of seven spans 115 ft. each and a total width of 60 ft.

All proposals must be for the work complete in full accordance with plans and specifications and must be made on the form of proposal attached to and forming a part of the specifications.

Copies of the plans and specifications may be obtained in the office of the Consulting Engineer, J. B. Long, 59-61 Boyer Arcade, Norristown, Penna., on payment of five dollars per set.

Each bidder must accompany his proposal with a certified check for $15,000.00 made payable to the Commissioners of Montgomery County, Penna., as a guarantee of good faith and to protect the County from any loss by failure to comply with the terms of the proposal. This check shall be handed to the Chief Clerk to the County Commissioners at least one hour before the time set for opening the bids.

The right is reserved to reject any or all bids.

WM. C. IRVIN.
County Controller.

Bids: July 1.

Highway Work

Harrisburg, Pa.

Pennsylvania Department of Highways, Harrisburg, Pa. Bids will be received July 1, 1924, for the construction of thirteen projects, totaling seventy-four miles, construction to be either bituminous surface on a concrete base or reinforced concrete. Projects situated in the following counties: Berks, Bradford, Wyoming, Chester, Dauphin, Indiana, Luzerne, Lycoming, Monroe, McKean, Schuylkill, Westmoreland, York.

Full particulars upon application to Paul D. Wright, Secretary of Highways, Harrisburg, Pennsylvania.

OFFICIAL PROPOSALS

Bids: July 18.

Canal Terminal Construction

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF CANALS

Albany, N. Y.
June 18th, 1924.

Sealed proposals will be received by the undersigned at his office, 55 Lancaster street, Albany, N. Y., until twelve o'clock noon (daylight saving time), of Friday, July 18th, 1924, at which place and hour they will be publicly opened and read, for the construction of Barge canal terminals, pursuant to the provisions of Chapter 746, Laws of 1911, and amendatory laws, Chapter 698, Laws of 1920, and Chapters 146 and 225, Laws of 1923, as follows:

—1—

TERMINAL CONTRACT NO. 81-C.

For furnishing and installing bagging garners, marine leg pushers and hoists and miscellaneous equipment in the grain elevator at Gowanus Bay, Borough of Brooklyn, New York City.

Contract plans, sheets 1 to 16 inclusive.

—2—

TERMINAL CONTRACT NO. 82-H.

For installing a heating system in the administration building on the terminal pier at Oswego.

Contract plans, sheets 1 and 2.

—3—

TERMINAL CONTRACT NO. 82-P.

For installing a plumbing system in the administration building on the terminal pier at Oswego.

Contract plans, sheets 1 and 2.

—4—

Also, for constructing a dry-dock and an approach channel thereto, at Waterford, N. Y., pursuant to the provisions of Chapter 106, Laws of 1922, and Chapter 450, Laws of 1923, and amendatory laws.

Sheets 1 to 12 inclusive.

Plans may be seen, and detailed specifications, engineers' estimates of quantities, proposal blanks, form of contract and bonds required and other information for proposers may be had at the office of the Bureau of Canals, Albany, N. Y.; at the office of the Division Engineer, Department of Public Works, at Utica, Syracuse, Rochester and Buffalo; and at the Terminal Warehouse, Pier 6, East River, New York City.

Blueprint copies of plans will be furnished by the State Engineer and Surveyor upon the receipt at his office in the Telephone Building, Albany, N. Y., of payment at the rate of fifteen cents (15c.) per sheet. Refund will not be made for any blueprints which may be returned.

Monthly estimates will be paid of ninety per centum (90 per cent) of the work done at the contract price. Every proposal for said work must be accompanied by a money deposit in the form of a draft or certified check upon some good banking institution in the city of Albany or New York, issued by a national or state bank (or trust company, in the case of terminal contract), in good credit, within the State and payable at sight to the Commissioner of Canals and Waterways for five per centum (5 per cent) of the amount of the proposal.

The person whose proposal shall be accepted will be required to execute a contract and furnish bonds within ten days from the date of notice of award delivered to him or them in person or mailed to the address given in the proposal.

Upon execution of the contract and approval of bonds, the certified check or draft will be returned to the proposer unless the same shall have been presented for collection prior to such time in which case the amount of the deposit will be refunded by the Commissioner of Canals and Waterways.

The deposits of bidders other than the one to whom the award of contract shall be made will be returned immediately after the award has been made.

The bond required for the faithful performance of the contract shall be in such sum as shall be fixed by the Commissioner of Canals and Waterways, which sum shall not be less than twenty per centum (20 per cent) of the estimated cost of the work, according to the contract price, and an additional bond known as the labor bond, in the sum of ten per centum (10 per cent) of the amount of the estimated cost of the work, according to the contract price, will be required as security that the contractor will pay in full at least once in each month all laborers employed by him upon the work specified to be done in the contract.

In the event that more than one surety company is offered as surety on said bonds co-insurance only will be accepted.

OFFICIAL PROPOSALS

Each proposal must be addressed to the Bureau of Canals, State Department of Public Works, Albany, N. Y., and must be endorsed on the envelope with the name of the construction for which the proposal is made.

Award, if made, will be made to the person or persons whose proposal shall be lowest in cost to the State for doing the work, and which shall comply with all provisions required to render it formal. Before any award shall be made the lowest bidder will be required to satisfy the Commissioner of Canals and a Waterways of his ability to provide suitable equipment and materials for the proper performance of the work.

The right is reserved to reject any or all proposals and readvertise and award the contract in the regular manner if, in the judgment of the undersigned, the interests of the State will be enhanced thereby.

ROYAL K. FULLER,
Commissioner of Canals and Waterways.

Bids: July 8.

Bids for Sidewalk Construction

Lakeland, Fla.

Sealed proposals will be received by the City of Lakeland, Florida, until 7:30 p.m., Tuesday, July 8th, 1924, for paving sidewalks with widths of 5 and 6 ft. and lengths totaling about 130,000 lin.ft. The type of sidewalk to be bid upon is portland cement concrete on sand foundation, and includes grading and necessary connections with existing work.

Blank forms of proposal and specifications will be furnished prospective bidders. Plans for the same are on file in the offices of the City Manager and City Engineer of said City, where they may be examined.

Certified check for $4,000.00 is required with each bid and bond for 50% of the contract price will be required of the successful bidder, such bond to be a bond with reputable and responsible Surety Company as Surety written through their resident Agent and who has been their such resident Agent in the City of Lakeland for six months.

The City reserves the right to reject any and all bids.

The City reserves the right to increase or decrease the amount of work included in these specifications without affecting in any way the contract prices and without affecting the specifications or contract in any other respect.

The City reserves the right to group the work in units as set forth in Instructions to Bidders, and to let separate contracts for any one or more units.

The City reserves the right to purchase concrete materials and furnish them to the contractor to be placed by him under the specifications at prices bid by him.

ANTON SCHNEIDER,
City Manager.
J. L. DAVIS,
City Clerk and Auditor.
CHARLES CARROLL BROWN,
City Engineer.

Bids: July 9.

Sewage Pumping Station

Jackson, Mich., June 16, 1924.

Sealed proposals will be received by the City Clerk of the City of Jackson up to 12 o'clock noon, Eastern Standard Time, of Wednesday, the 9th day of July, 1924, for the construction of a sewage pumping station comprising a reinforced concrete, steel and brick structure about 27 feet square in plan, with a pump pit, rack chamber, motor room, steel rocks, sluice gates, and cast iron piping and valves.

The Plans and Specifications under which the work is to be done may be examined at the office of the City Clerk or of the City Manager at Jackson, and copies may be obtained by making a deposit of Ten Dollars, which will be refunded upon their return in good condition, within ten days after the date of receiving proposals.

A certified check in the sum of One Thousand Dollars will be required with each proposal.

The right to accept any proposal, to reject any or all proposals, and to waive defects in proposals, is reserved by the City.

J. E. WHITTAKER,
City Manager.

OFFICIAL PROPOSALS

Bids: July 16.

Delaware River Bridge

CONTRACTS 17 AND 18
PHILADELPHIA AND CAMDEN
APPROACH SUPERSTRUCTURES

Philadelphia, Pa.

Sealed proposals will be received by the Delaware River Bridge Joint Commission at Room 806 Widener Building, Philadelphia, Pa., until 1.30 o'clock p.m., Eastern Standard Time, July 16, 1924, when they will be publicly opened and read, for Contracts Nos. 17 and 18, for the construction of the superstructures of the Philadelphia and Camden approaches of the bridge over the Delaware River between the cities of Philadelphia and Camden.

Contract No. 17 is for the construction of the superstructure of the Philadelphia approach, located between Front Street and Fourth Street in Philadelphia.

Contract No. 18 is for the construction of the superstructure of the Camden approach, located between the Camden anchorage, west of Delaware Avenue, and Third Street, in Camden.

The work under each contract will include the furnishing, fabricating, painting and erecting of the steel superstructure complete as shown on the drawings. The work comprises approximately 11,600 tons of steelwork in Philadelphia and 13,500 tons of steelwork in Camden. The contract time for the entire work is twenty-two months. Unit price bids are asked for each contract.

Attention is called to the forms prescribed for bidders on these two contracts, in that they are invited to bid under either or both of two forms in each contract. In Form "A" the bidder is to state his prices for the work proposed without dependence upon the award of the other contract. In Form "B" the bidder is to state his prices for the work proposed, upon the express condition that he also be awarded the other contract. The proposal in Form "B," in order to be valid, must be made in the proposals for both contracts.

Copies of the contract and contract drawings may be obtained at the office of the Joint Commission upon deposit of Twenty-five dollars for each contract, which deposit will be returned upon receipt of bid or return in good condition of the contract books.

Each proposal must be accompanied by a certified check for the sum of Fifty Thousand Dollars ($50,000) payable to the Delaware River Bridge Joint Commission, and Surety's consent must be shown. The bidder or bidders to whom the contracts are awarded will be required to give bond in the sum of 50 per cent of the amount of the contract.

The right is reserved to reject any or all bids.

Delaware River Bridge Joint Commission.
GIFFORD PINCHOT,
Chairman.
JOSEPH K. COSTELLO,
Secretary.

Bids: July 7.

Water Supply

Victor, N. Y.

Sealed proposals will be received by the Board of Trustees of the Village of Victor, N. Y., until 8 o'clock p.m., on the 7th day of July, 1924, for the additional water supply consisting of about three miles of eight-inch supply main, intake, pump house and accessories.

Plans and specifications may be seen at the office of the Board at Victor, N. Y., or at the office of Hopkins & Field, Engineers, 349 Cutler Building, Rochester, N. Y. Plans may be obtained from the engineers upon a deposit of ten dollars.

The Board hereby reserves and has the right to reject any or all bids, or to accept any that in its judgment will be for the best interests of the Village.

A surety bond satisfactory to the Board in form and amount will be required of him to whom a contract may be awarded.

A certified check, made payable to the Board of Trustees of Victor, N. Y., to the amount of $1,000, must be deposited by each bidder and accompany his bid, as a guarantee that in case the contract is awarded to him he will, within ten days thereafter, execute such contract and furnish his bond.

Bids must be sealed and addressed to the Board of Trustees, Victor, N. Y., and marked on the outside of the envelopes "Proposal for Additional Water Supply."

EDGAR B. CASE, Village President.
MICHAEL KEATING, Clerk.
Dated, Victor, N. Y., June 2, 1924.

OFFICIAL PROPOSALS

Bids: July 21.

Pipe Sewers and Disposal Works

Hasbrouck Heights, N. J.

Sealed proposals will be received and opened publicly by the Mayor and Council of the Borough of Hasbrouck Heights, N. J., at the Borough Municipal Hall, at 8:15 p.m. (Daylight saving time), Monday, July 21, 1924.

Proposals are to cover construction (both materials and labor) of certain pipe sewers and disposal works, according to plans and specifications filed with the Borough Clerk.

Copies of plans and specifications may be seen also at office of the engineers, City-Wastes Disposal Company, 45 Seventh Avenue, New York City. Sets may be borrowed upon deposit of $15 of which $10 will be refunded if papers are returned in good condition before August 1, 1924.

Approximately the proposed work consists of:

About 72,000 feet of vitrified pipe sewers, 8-inch to 20-inch, with manholes and flush-tanks.

About 3,800 feet of iron pipe sewers with appurtenances, 8-inch to 16-inch.

An indeterminate amount of drain-tile laid in sewer trench.

Sewage tanks, trickling filters and sand-beds with appurtenances.

Each bid must be made on blank forms obtained from the Borough Clerk or the Engineers, and must be accompanied by a certified check for $10,000 as a guarantee of good faith.

The Borough reserves the right to reject any or all bids.

JOSEPH P. BREEZE,
Borough Clerk,
Hasbrouck Heights, N. J.

Bids: July 12.

Street Paving and Storm Sewer Construction

Cold Spring, N. Y.

Sealed proposals will be received by mail by the President and Trustees of the Village of Cold Spring, New York, at the Hose House in Cold Spring, New York, until three o'clock (standard time), July 12, 1924, for street improvements and storm sewer line.

The work will consist of about 6,000 square yards of reinforced cement concrete pavement; 3,700 linear feet of curb, and 3,000 linear feet of concrete storm sewer pipe 18" to 30" in size and concrete box culvert.

All bids must be upon blanks provided in the proposal furnished to bidders.

Bids must be accompanied by a certified check for three per cent (3%) of the amount of the bid. Plans and specifications will be on file at the Village Clerk's office in the Village of Cold Spring, New York, and at the office of the Engineer, H. Eltinge Breed, 507 Fifth Avenue, New York City.

Copies of the plans and specifications may be obtained on and after June 28, 1924, for three dollars ($3.00) per set. No refund for blanks returned. Bidding blanks will be furnished free.

The right is reserved to reject any or all bids.

CHARLES HASENMAILE,
Village Clerk.

ENGINEER,
507 Fifth Avenue,
New York City.

Bids: July 31.

Sanitary Out-Fall Sewers

Tulsa, Okla.

Bids will be received by the City of Tulsa on July 31st, 1924, for the construction of sixteen miles of sanitary out-fall mains, with two disposal plants. Estimated total cost $450,000.00. Ninety per cent of monthly estimates in cash.

CHARLES SCHULTZ,
City Engineer.

If we had no faults we should not take so much pleasure in noting those of others. (Old adage.) But even so "Swart Service Really Serves" unusually well.

SWART—Insurance
92 William St., N. Y. C.

OFFICIAL PROPOSALS

Bids: July 11.

Reconstruction of Roads

Mount Holly, N. J.

Notice is hereby given that sealed bids will be received by the Board of Chosen Freeholders of the County of Burlington, N. J., for the reconstruction of the following roads: Road known as the Cooperstown Road from State Highway Route No. 2 to Penna. Railroad tracks in Beverly City; estimated amount of surface pavement required is 13,800 sq.yd. Riverton-Moorestown Road in the townships of Moorestown, Cinnaminson and Riverton Borough; estimated amount of surface pavement required is 54,348 sq.yd. Said roads to be reconstructed of sheet asphalt surface upon a macadam foundation; and opened and read in public in the Freeholder's Room, County Collector's Office, Mt. Holly, N. J., on Friday, July 11th, at 10:30 A.M., Eastern Standard Time.

Drawing and specifications and forms of bid, contract and bond for the proposed work, prepared by H. B. Smith, County Engineer, has been filed in the office of the said Engineer, Court House, Mount Holly, N. J., and may be inspected by prospective bidders during business hours. Bidders will be furnished with a copy of the specifications and blue print of the drawings by the engineer on proper notice. Bids must be made on the standard proposal forms in the manner designated therein and required by the specifications, must be enclosed in sealed envelopes, bearing the name and address of bidder and the name of the road on the outside, addressed to Alfonza Adams, Clerk, Mount Holly, N. J., and must be accompanied by a certificate from a surety company and a certified check for not less than 10 per cent of the amount of the bid and be delivered at the place and on the hour above named. The standard proposal form is attached to the specifications, copies of which will be furnished upon application to engineer.

The Board reserves the right to reject any or all bids.

By order of the Board of Chosen Freeholders of the County of Burlington.
ALFONZA ADAMS, Clerk.

Bids: July 15.

Road Construction

Harrisburg, Pa.

Pennsylvania Department of Highways, Harrisburg, Pa. Bids will be received July 15, 1924, for construction of fifteen projects, totaling thirty-seven miles, construction to be either bituminous surface on a concrete base or reinforced concrete. Projects situated in the following counties:

Allegheny, Beaver, Blair, Chester, Clarion, Fayette, Indiana, Jefferson, Perry, Somerset, Warren, Washington.

Also for the construction of a reinforced concrete bridge lying between Northumberland, Snyder and Union Counties.

Full particulars upon application to PAUL D. WRIGHT, Secretary of Highways, Harrisburg, Pennsylvania.

Bids: July 15.

Reinforced Concrete Bridge

Norristown, Pa.

Bids will be received by the Controller of Montgomery County, at his office in the Court House, Norristown, Pa., up until 10 o'clock a.m. (Standard Time), July 15, 1924, for the reinforced concrete bridge No. 278 over the Perkiomen Creek at Schwenksville in Perkiomen Township.

The Commissioners reserve the right to reject any or all bids.

Checks accompanying proposals must be handed to the Clerk to the County Commissioners one hour before the time for the opening of bids, which will be done publicly at 11 o'clock a.m., July 15, 1924, (Standard time), in the County Commissioners' office.

WM. C. IRVIN,
Controller.

Construction Bonds

taken by contractors in payment for Municipal Improvements.
(BOUGHT AND SOLD)

D. D. F. YARD, Investment Securities
120 Broadway, New York.
H. H. Sears, Counsel.

OFFICIAL PROPOSALS

Bids: **July 17.**

Tenders for Water Pipe Line

ESSEX BORDER UTILITIES COMMISSION
Windsor, Ontario.

Sealed tenders addressed to the Secretary of the Commission will be received by the Essex Border Utilities Commission, Heintzman Building, WINDSOR, ONTARIO, up to 4 p.m. on Thursday, 17th of July, 1924, for:

(a) Supplying and laying of approximately 10,000 feet of 42 inch, 36 inch and 24 inch steel pipe or alternately;

(b) Supplying and laying of approximately 10,000 feet of 42 inch, 36 inch and 24 inch reinforced concrete pipe.

(c) Supplying 42 inch, 36 inch and 24 inch flanged valves and air valves.

Plans and specifications can be obtained and further information secured from J. Clark Keith, Chief Engineer of the Commission, Windsor, Ontario, or from Gore, Nasmith & Storrie, Consulting Engineers, 625 Confederation Life Building, Toronto, Ontario.

A cheque for $10 must be submitted before plans and specifications can be obtained for contract (a) or (b) which will be returned on tenders being submitted.

A marked deposit cheque for 5 per cent of the tender sum must accompany all tenders.

The Commission reserves the right to accept any or reject all tenders.

R. B. BRAID, Secretary.

Bids: **July 17.**

Pumping Station and Water Treatment Plant

Westerville, Ohio.

Sealed proposals for construction of a pumping station and a 0.5 M.G.D. water treatment plant will be received by the Commission of the Village of Westerville, Ohio, at the office of the City Manager until 12 o'clock noon, July 17, 1924, at which time they will be publicly opened and read.

Plans and specifications may be seen at the office of the City Manager, or may be obtained upon depositing ten ($10.00) dollars, five ($5.00) dollars of which will be refunded upon return of the plans on or before the day of the letting.

The Commission reserves the right to reject any or all bids.

RICHARD BIEHL,
City Manager.

Bids; **July 7.**

Paving

White Plains, N. Y., June 11, 1924.

Sealed bids or proposals for the improvement of the following roads with reinforced concrete pavement will be received at the office of the Clerk of the Board of Supervisors, Court House, White Plains, New York, until 10 a.m. (Daylight Saving Time), July 7th, 1924.

County Road No. 22, Lexington Avenue, Village of Mt. Kisco, 0.96 mi.

County Road No. 25, Main Street, Village of Peekskill, 1.03 mi.

Plans, specifications, proposal sheets and all information relative to same may be procured at the office of the County Superintendent of Highways, Court House, White Plains, New York, upon making a deposit of Five dollars ($5.00) for each set of plans.

BOARD OF SUPERVISORS,
FRED L. MERRITT, Clerk.

Hauling Contracts Wanted

Road work, Material Handling, etc. Have several fleets of trucks ready for service anywhere. No job too large. Special equipment for any kind of dump truck hauling or unloading. Unlimited referenes. Glad to estimate.

HAMBRIDGE CONTRACTING CO.
68th and Greenway Ave., Philadelphia, Pa.

EXCAVATION

Steam Shovels for rent with crews or work taken by contract.

Dinkeys and cars or teams furnished.

H. C. AMBLER
3717 Old York Road, Philadelphia, Pa.

OFFICIAL PROPOSALS

Bids: **July 3.**

Road Improvement

Newton, N. J.

Notice is hereby given that sealed bids will be received by the Board of Chosen Freeholders of the County of Sussex for the improvement of the Tranquility Andover Road in the Township of Green in the County of Sussex with a gravel surface, estimated amount of grading required is 9,887 cu.yds. and estimated amount of gravel pavement required is 42,908 sq.yds., and opened and read in public at the Freeholders Office, Newton, N. J., on July 3, 1924, at 11:30 a.m. Daylight Saving Time.

Drawings, specifications and forms of bid, contract and bond for the proposed work prepared by Harvey Snook, County Engineer and approved by the State Highway Commission, have been filed in the office of the said Engineer at Newton, N. J., and of said Highway Commission, Trenton, N. J., and may be inspected by prospective bidders during business hours. Bidders will be furnished with a copy of the specifications and blue prints of the drawings by the Engineer on proper notice and payment of cost of preparation. Bids must be made on the standard proposal forms in the manner designated therein and required by the specifications, must be enclosed in sealed envelopes, bearing the name and address of the bidder and name of road on the outside, addressed to The Board of Chosen Freeholders of the County of Sussex and must be accompanied by a certificate from the Bonding Company and a certified check for not less than ten (10) per cent of the amount bid, provided said check shall not be less than $500.00 nor more than $20,000.00 and be delivered at the place and on the hours above named. The standard proposal form is attached to the specifications, copies of which will be furnished on application to the Engineer.

By order of The County of Sussex.
(Signed) NORMAN B. ANDERSON,
Clerk.

Bids: **July 2.**

Pavement, Curb and Storm Sewer

Pine Bluff, Ark.

Ark., Pine Bluff, July 2nd at 11:00 a.m. at Chamber of Commerce. Furnish and place 29,000 sq.yds. reinforced or vibrolithic concrete pavement; 18,000 lin. ft. combination curb and gutter; 6,500 lin. ft. of 12 in. to 30 in. storm sewer. GUEST ENGINEERING COMPANY, Pine Bluff, Engrs. Bonds have been sold and approved.

Bids: **July 1.**

Concrete Pavement

Pekin, Ill.

Bids desired July 1st at two p.m., at City Clerk's office, improving Court Street with compacted concrete pavement. 12,300 sq.yds., 18 ft. width, 7 in. slab, 3,000 cu.yds. excavation and constructing shoulders. Plans and specifications on file with City Clerk. Certified check for ten per cent of bid required.

EXCAVATION AND GRADING

O. S. HOCH
Allentown, Pa.

We Dig and Refill Trenches

for water, sewer, gas, conduits and drains.

Pipe laid by contract and installation of water systems.

Trench Machines and Backfillers For Rent

W. G. Fritz Co., Inc., *Contractors*
258 Valley Road, West Orange, N. J.

OFFICIAL PROPOSALS

Bids: **July 22.**

Court House Building Improvement

Norristown, Pa.

Bids will be received by the Controller of Montgomery County, at his office in the Court House, Norristown, Pa., up until 10 o'clock a.m. (Standard time), July 22, 1924, for the Renovation and repairing of the Court House Building, Norristown, Pa., in accordance with plans and specifications on file in the County Commissioners' office.

The Commissioners reserve the right to reject any or all bids.

Checks accompanying proposals must be handed to the Clerk of the County Commissioners, one hour before the time for the opening of bids, which will be done publicly at 11 o'clock a.m. (Standard time), July 22, 1924, in the County Commissioners' office.

WM. C. IRVIN,
Controller.

Railroad Construction, Calumet, Mich.

Calumet, Mich.

Bids are invited at once by the Calumet and Hecla Consolidated Copper Company, Calumet, Michigan, for construction of a single track railroad about 9.3 miles long, near Calumet, Houghton County, Michigan, involving approximately 302,000 cu.yds. earth excavation, 45,000 cu.yds. rock excavation, 247,000 cu.yds. earth borrow, 3,200 cu.yds. concrete, placing 9,000 lineal feet of culvert pipe, 9.3 miles track laying, ballasting and fencing.

U. S. GOVERNMENT

SEALED PROPOSALS will be received by the U. S. Veterans Bureau, Room 791, Arlington Building, Washington, D. C., until 11:00 A.M., July 22, 1924, and then and there publicly opened for the construction of New Bituminous Macadam roads, and resurfacing and patching of existing roads at U. S. Veterans Hospital No. 78, North Little Rock, Arkansas. Proposals will be considered only from individuals, firms, or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. Drawings and specifications may be obtained upon application to the Construction Division, U. S. Veterans Bureau, Room 791, Arlington Building, Washington, D. C., or to the Medical Officer in Charge, U. S. Veterans Hospital No. 78, North Little Rock, Arkansas. Deposit with application of a check or postal money order for $10, payable to the Treasurer of the United States, is required as security for safe return of drawings and specifications within ten days after date of opening proposals. FRANK T. HINES, Director, June 23, 1924.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 20, 1924. SEALED PROPOSALS will be opened in this office at 3 p.m., July 11, 1924, for removing the present boiler, etc., and furnishing and installing one horizontal smokeless fire-box heating boiler, etc., at the United States Post Office, Pontiac, Mich. Drawings and specifications may be obtained from the Custodian, U. S. Post Office, Pontiac, Mich., or from this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 20, 1924.—SEALED PROPOSALS will be opened in this office at 3 P.M., July 21, 1924, for the construction including mechanical equipment and approaches of a (one story brick and tile non-fireproof) Post Office Building (approximately 75 ft. x 51 ft. in size) at Jerseyville, Ill. Drawings and specifications may be obtained from the Custodian of the site at Jerseyville, Ill., or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

U. S. ENGINEER OFFICE, Nashville, Tenn. Sealed proposals will be received here until 11 a.m., July 7, 1924, and then opened, for one steel steamboat hull. Further information on application.

U. S. GOVERNMENT

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., June 16, 1924.—Sealed proposals will be opened in this office at 3 p.m., July 14, 1924, for the construction of a one-story brick and tile non-fireproof Post Office building (61 feet 6 inches by 69 feet) at St. Johnsbury, Vt. Drawings and specifications may be obtained from the Custodian of the site at St. Johnsbury, Vt., or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

U. S. ENGINEER OFFICE Florence, Ala. Sealed proposals will be received here until 11 a.m., Aug. 5, 1924, and then opened, for furnishing and erecting a bascuel bridge across the navigation lock of Wilson Dam. Further information on application.

U. S. GOVERNMENT

PROPOSALS FOR LEVEE WORK.—Office, Mississippi River Commission, 1st & 2nd Districts, 1006 McCall Building, Memphis, Tenn.—Sealed proposals will be received here until 11 a.m., July 8, 1924, and then opened, for constructing about 5,315,000 cubic yards of earthwork in the Upper and Lower St. Francis, Reelfoot and White River Levee Districts. Further information on application.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., June 16, 1924.—Sealed proposals will be opened in this office at 3 p.m., July 15, 1924, for the construction of a one-story brick nonfireproof Post Office building, approximately 75 by 50 feet in size, at Waterloo, N. Y. Drawings and specifications may be obtained from the Custodian of the site at Waterloo, N. Y., or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

U. S. GOVERNMENT

UNITED STATES ENGINEER OFFICE, P. O. Box 72, Louisville, Ky. Sealed proposals will be received here until 2:00 p.m., central time, July 24, 1924, and then opened, for furnishing and delivering approximately 750 tons of Hydrated Lime for Dams Nos. 44, 45 and 46, Ohio River. Further information on application.

UNITED STATES ENGINEER OFFICE, P. O. Box 72, Louisville, Ky. Sealed proposals will be received here until 2:00 p.m., central time, July 22, 1924, and then opened, for furnishing and delivering Structural Steel, Castings, etc., for Locks Nos. 49 and 50, Ohio River. Further information on application.

EMPLOYMENT

POSITIONS VACANT

DRAFTSMAN—Experienced man on gas works design. Write giving outline of experience, salary expected and time available. All correspondence confidential. P-209, Engineering News-Record, 10th Ave. at 36th St., New York.

EXPERIENCED structural detailers wanted. Single men preferred. Only experienced men need apply. Application should give telegraphic address. State experience and accompany sample drawing of work. State salary desired. Address Box 654, Havana, Cuba.

EXPERIENCED engineer and estimator on building construction of all kinds, familiar with work in the vicinity of Newark, N. J. Reply stating experience, reference and salary expected. P-250, Eng. News-Record, 10th Ave. at 36th St., N. Y.

FOREMEN and subforemen wanted immediately for construction work on large dam. Experienced men capable of handling crews of concrete, form and steel workers, riggers, mechanics, and common labor. Apply by letter to Consumers Power Company, Coline Dam, Mesick, Michigan.

GRADUATE engineer wanted to teach mechanics and assist in testing laboratory; teaching experience desired. Box 483, State College, Pa.

MAP draftsman, for tax maps, experience, neatness, accuracy and speed essential. Location, Eastern Ohio. Submit samples of work and state salary. P-240, Eng. News-Record, Leader-News Bldg., Cleveland, O.

ONE assistant engineer and two instrument men with highway construction experience wanted. Apply J. R. Hunt, Road Engineer, Williamson, W. Va.

RESIDENT engineers on highway construction, salaries $180 to $200 per month. State age, education, experience and references first letter. R. D. Jordan, Div. Engr. State Highway Commission, Selma, Alabama.

REINFORCED concrete designing engineer wanted. Must have executive ability and be accustomed to handle a drafting room. Location Japan. Requirements are thorough technical training of at least five years, two of which should include executive experience, in charge of design. Application must state age, experience, nationality, habits, and whether married or single. References required, preferably from previous employers. No application will be considered that fails to follow above instructions exactly. Wanted also a reinforced concrete engineer with sales experience for Rangoon, Burma. Submit same information as above. Truscon Steel Co., Youngstown, Ohio.

SEVERAL experienced draftsmen on stairs, elevator inclosures, marquise, and and the general line of ornamental iron work wanted. In replying state experience and salary expected. Address Richmond Structural Steel Company, Inc., Richmond, Va.

Learn Estimating and Construction Management

through practical spare time study course. Full particulars and first lessons sent for free examination.

TYREAN INSTITUTE
15 Grove St., Palmer, Mass.

POSITIONS VACANT

SEVERAL detailers and checkers experienced on shop drawings for structural steel work. Excellent opportunity for first-class men. Whitehead & Kales Co., Detroit, Mich.

STRUCTURAL steel detailers and checkers wanted. Only experienced men need apply. J. Cutler Iron Works Inc., 95 Lombardy St., Brooklyn, N. Y.

STRUCTURAL steel detailer and checker, experienced in building work. State in application age, nationality, education, experience, references, salary expected, and date available. The James H. Tower Iron Works, Providence, R. I.

STRUCTURAL steel and railroad bridge draftsmen wanted. State age, nationality, education, experience in full, salary expected and the date you can report for work. Address P. G. Lang, Jr., Engineer of Bridges, Baltimore and Ohio Railroad Company, Baltimore, Md.

SURVEYOR with actual experience in sectionizing, subdividing and city lot surveying. Permanent position at good salary for registered surveyor who has been in business for himself in Chicago district. James Anderson Company, Lake Forest, Ill.

WORKING sub-foremen capable of sheathing, excavating and concreting small foot bridge abutments and building dry retaining walls. Wages $6.00 to $7.00 per day. Apply by letter or in person to Superintendent, Bronx Parkway Commission, Bronxville, N. Y.

EMPLOYMENT AGENCIES

GENERAL Engineering Agency, Allegheny Building, Pittsburgh, require proposals for transcontinental connections, Boston, New York, Philadelphia, Birmingham, St. Louis, Detroit, etc. Mechanical superintendents, production, power, electrical divisions. Master mechanics, plant draftsmen, chemists, for architectural, structural; office, shop and field work. Office structures, factory buildings, automotive, steel, mining, smelting and chemical industries. Chief draftsmen, checkers, detailers, sixty bonafide topographical map or constructional draftsmen for highways, railways. Assistant City Engineers, small cities. Professors, instructors, teachers for colleges, high schools. Latin-American connections. Commission, 3 per cent. Employers served freely.

EMPLOYMENT AGENCIES

WANTED immediately: Bridge designer, middle west, $185; chief of party, highway work, south, $175 and expenses; structural and field engineer, speak Spanish, Mexico, $200, transportation; structural draftsman, Texas, $175; highway draftsman, east, $150; highway instrumentman, east, $100 and expenses; instructor in C. E. and director athletics, $2,400; concrete highway inspector, $150. Apply Business Mens Clearing House, Denver, Colorado.

EMPLOYMENT SERVICE

SALARIED men seeking tentative offers of new connections, are invited to communicate confidentially with the undersigned, who will negotiate overtures without jeopardy to present connections. A professional, ethical service, restricted to high grade positions; established 1910. Retaining fee refunded as provided in our "Refund Contract" if service is not satisfactorily rendered as per contract, and such refund be requested within three months from date remitted. Send name and address only for particulars. R. W. Bixby, Inc., 701 Lockwood Building, Buffalo, New York.

SPECIALIZED SERVICE

for placement of men with technical training for all branches of manufacturing, commercial and engineering lines, negotiations strictly confidential, no advance obligations required. Many thousands of satisfied clients can testify as to the merit of our eighteen years of service.

INTERSTATE EXCHANGE
658 Rose Bldg., Cleveland, O.

Wilson Courses *(by mail)*

Called the most "Practical Courses" in existence. The courses called by students "Men Makers. With just sufficient theory to make the practice work *understandable*. No re-hashing of college work: We aim to help you apply your college taught theory in the most interesting manner possible. The price of such a course should not hold any ambitious man from subscribing because the difference in salary will quickly cover the item; we have found this to be true in all cases where the student was in earnest. IMMEDIATE promotion upon acquisition of more earning power, following a period of studying our courses. Wilson trained men are finding it easier to secure and hold positions.

Send for our literature and learn WHY. It IS FREE.

Courses are
Reinforced Concrete Engineering,
Structural Steel Designing, Estimating, Drafting
Bridge Design, Estimating
Concrete Drafting and Estimating

Preparatory course for men who lack a technical education, leads right into the higher courses. Write NOW:

Wilson Engineering Corporation
College House Offices, Harvard Sq., CAMBRIDGE, MASS.

EMPLOYMENT

AND OTHER BUSINESS OPPORTUNITIES

Positions Wanted, 4 cents a word, minimum charge 75 cents an insertion.
Positions Vacant and all other classifications, 8 cents a word, minimum $2.

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Replies are forwarded each day as received at all of our offices without additional charge.

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E.N.R.

EMPLOYMENT SERVICE

THE Employment Division, Oregon Chapter, American Association of Engineers offers a service whereby the qualifications of competent engineers are placed before employers of California and the Pacific Northwest. Let us tell you about it. Employment Division, Oregon Chapter, A.A.E., 612-13 Couch Building, Portland, Oregon.

EXECUTIVES, engineers, $3,000-$25,000, will find our individual, confidential service an effective medium in making new connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Our refund agreement protects you. Not employment agency. Jacob Penn, Inc., 305 Broadway, New York.

EXECUTIVES, engineers and other qualified men whose salary requirements are over $2,500 per year, find our confidential direct service to specific employers extremely satisfactory. An inquiry entails no obligation. The National Business Bourse, Inc., H. H. Harrison, President, Association Building, Chicago.

POSITIONS WANTED

Civil Engineers

BY graduate W. P. I., civil engineering, age 28, married. Seven years' field and office experience all phases of hydro-electric development. Available at once. PW-230, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, age 30, university graduate. Six years' experience in railroad maintenance work. Desires permanent connection with a railroad where ability and hard work is required. PW-70, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

CIVIL engineer with thirty years' contractor's experience in structural steel, reinforced concrete and general building construction, would purchase interest in firm in Piedmont section of Virginia. PW-257, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, graduate, 15 years' experience; design construction, sewers, railroads, subways; power and industrial plants; hydro-electric development. PW-256, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, structural fitter and inspector. Plant engineer experience. Young, married. Desires change. West preferred. PW-245, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

POSITIONS WANTED

CIVIL engineer, Dane, 23, graduated from Royal Technical College, Copenhagen, with one year's experience as draftsman in structural steel, and some experience as surveyor. Knud B. Nielsen, 1160 Hoe Ave., Bronx, N. Y.

CIVIL engineer, age 27, 5 years' varied experience, highway, tunnel and mine surveys; designing, detailing and estimating steel and reinforced concrete structures, desires position with engineer or contractor. PW-249, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL engineer, graduate, ten years' experience, surveys and reinforced concrete design, desires position. Anything considered, railroad or state highway department preferred. PW-237, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

CIVIL engineer with fifteen years' experience as general superintendent and field engineer building steel tower transmission lines and converting steam operated railways to electric with modern construction, is open for position. PW-229, Eng. News-Record, 10th Ave. at 36th St., New York.

EXPERIENCED civil engineering graduates, now on engineering staff of prominent reinforcing bar company. Will design, detail reinforced concrete. Structural details all types concrete buildings especially. PW-238, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

GRADUATE civil engineer, age 38, married, wants permanent position. South or Southwest preferred. 8 years' experience in city work, estimates, design, layout and supervision of sewers, pavements and waterworks, sub-division planning and computation. Heavy mill foundations. References. Available immediately. PW-235, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

GRADUATE civil engineer, age 28, six years' field and office experience in construction and design of industrial and office buildings. Capable designing engineer, construction superintendent or field engineer. Location immaterial. Now employed, report on short notice. PW-233, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

PLANT engineer, graduate civil and mechanical, age 28, single. Six years' field and office experience in design, layout and construction of industrial plants and equipment. Location immaterial. Now employed, report on short notice. Salary $260. PW-234, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

POSITIONS WANTED

RAILWAY civil engineer; Cornell graduate, Assoc. M. Am. Soc. C.E., age thirty-three years, single; six years' experience with same company on railway maintenance and construction work, with field and office duties, including one year of bridge design. References. Permanent position desired offering good opportunity for advancement with railroad or contractor. PW-255, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

SITUATION as assistant city engineer in a growing Western city desired by a young municipal engineer who can deliver the goods. A skilled draftsman. Salary $175. Write PW-216, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

UNIVERSITY connection desired by graduate civil engineer. Two years' graduate work at leading university. Twelve years' varied civil engineering experience in practice and teaching. Available this Fall. PW-236, Eng. News-Record, 10th Ave. at 36th St., New York.

Drafting and Designing

DRAFTSMAN and field man, 22, single. Transitman on extensive surveys; draftsman on mapping and large structures. Computor. Foreign experience. Foreign service preferred. Available after June. PW-66, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

REINFORCED concrete designer; graduate engineer, 12 years' experience office, mill buildings, power stations, etc. Field experience. Location New York City. $60. PW-262, Eng. News-Record, Tenth Ave. at 36th St. N. Y.

Mechanical and Electrical

MECHANICAL structural engineer, technical education; fifteen years' experience design, construction, maintenance, sales; responsible charge of work. PW-39, Engineering News-Record, 10th Ave. at 36th St., New York.

Estimators

ESTIMATOR-Superintendent: Graduate engineer. Twelve years' experience with large contractor in executive, estimating organizing, superintending and office management. Age 34, married. Salary $350. G. G. Jones, 610 Court St., Fort Worth, Texas.

EXPERIENCED, reliable building estimator and manager, having excellent record, wishes offers from sound established contracting firms. PW-201, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

STOP *Feeding Your Men!*

No need for you to bother with the details of housing and feeding the gang. Forget it. It's just another burden for you, but

It's Our Business

We operate boarding camps anywhere.

Laborers furnished free where we conduct commissaries.

We have been boarding men on large out-of-the-way construction jobs for 20 years in all parts of the United States and Canada—and under all conditions. We know the needs and all the little details in connection with such camps that keep labor contented and on the job. It will pay you to turn your labor problem over to us.

Central Boarding & Supply Company
Coca Cola Building, Kansas City, Mo.

Gen'l Superintendent

Structural Steel Fabricating Shop can furnished first class reference, employed at present. Age 32. Good organizer and can get results. Will go any place and consider a moderate salary.

PW-241, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

TECHNICAL GRADUATE
Mem. Am. Soc. C. E.

Twenty years' broad experience field engineering and construction for owners and for contractors. Hydro-electric developments, reinforced concrete, heavy cofferdams. Expert in pressure grouting. Open to temporary or permanent connection.

PW-170 Eng. News-Record,
Real Estate Trust Bldg., Philadelphia, Pa.

POSITIONS WANTED

Instructors

ASSISTANT professor, civil engineer. Assoc. M. A.S.C.E. Licensed engineer. Ten years' practical experience, three teaching, on staff technical college, desires change. PW-251, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

TEACHING, position as assistant professor or equivalent desired by civil engineering graduate, class 1917, age 28. 2 years in 25th Engrs., U. S. Army, on varied construction work in France. 1½ years instructor in mathematics and surveying, followed by 2 years teaching statics, kinetics and strength of materials. Past year as structural steel draftsman. PW-260, Eng. News-Record, 10th Ave. at 36th St., New York.

Superintendents

CONTRACTOR'S superintendent and engineer, available July 1st. Age 42. Experienced in water works, dams, sewers, subways, foundations, underpinning and general construction work. A-1 reputation and a thorough knowledge of the contracting business. Location immaterial. PW-173, Eng. New-Record, 10th Ave. at 36th St., New York.

GRADING superintendent wants position, earth, rock, general grading experience. American, age 40. PW-191, Eng. News-Record, 10th Ave. at 36th St., New York.

HIGHWAY construction superintendent, fifteen years' experience, best of credentials to ability and character; complete organization ready, particularly competent to handle the job in all details. Available immediately, PW-95, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

HIGHWAY and municipal engineer, construction superintendent, twelve years' practical experience, eight years responsible charge street, road, sewer construction of all types; executive ability; capable of handling all details for contractor—office, field, purchase, handling subcontractors; location immaterial; at present in complete charge road construction in South; salary $325. PW-223, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

SUPERINTENDENT of construction; first-class executive; have had responsible charge of large projects for years; first-class references and following; experienced on building, industrial plant, filtration plants, deep foundation work and power house construction. PW-175, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, wanted position as superintendent, or general superintendent. Have been general superintendent on highway paving and construction for the past five years with one firm, have always produced satisfactory results. Will accept nominal salary and percentage, making up own estimates. Address PW-179, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

SUPERINTENDENT, erection, ornamental, 25 years' experience take measurements, estimate costs; go anywhere. PW-247, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, experienced in asphalt, asphaltic concrete paving, curb, gutters, grading, asphalt plant. Married. Now employed; change desired account climate. PW-239, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, general foreman; whole life practical experience, carpenter by trade, 20 years in charge various different projects, all classes concrete, buildings, foundations, piers, coffer dams, bridges, water lines and sewers. PW-244, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT of highway construction; an old timer and a live one. A practical road contractors man, that has worked his way up from waterboy to superintendent, possessing common sense and the qualifications that bring results. Experienced in New York State, New Jersey, Pennsylvania, Ohio, West Virginia and Kentucky. Available immediately. Get busy. Speak quick. PW-231, Eng. News-Record, 10th Ave. at 36th St., New York.

POSITIONS WANTED

SUPERINTENDENT desires engagement, long experience, railroad, bridge foundation, tunnels, sewerage, water supply, concrete, crushing plant, heavy excavations, rock excavation and steam shovel operations. Available; location anywhere. References. PW-259, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

Surveyor

INSTRUMENTMAN on highway location desires permanent position; five years' experience; minimum salary $125 and expenses; available immediately. PW-263, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

Miscellaneous

CIVIL - mechanical engineer, graduate; thorough business training; capable executive; age 37; broad power, hydraulic and industrial plant experience with well-known organizations—design, construction and management. PW-221, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

FOREMAN, experienced, with great followers of Italian, Spanish, Portuguese and Slavonian laborers, desires position with or without men. PW-226, Eng. News-Record, 10th Ave. at 36th St., New York.

FOREMAN, experienced sewers, water, roads, concrete, general excavation. Matthews, 15 Park Row, Room 628, Phone Barclay, 8143 or Barclay 8176.

GENERAL foreman, 37; eighteen years' experience which includes land development, tunnels, subway, sewers, power houses, industrial plants and oil refineries. Capable of getting results economically. Willing to go anywhere. PW-253, Eng. News-Record, 10th Ave. at 36th St., New York.

GRADUATE engineer, single, age 26, four years' experience highway, sewer and municipal engineering. PW-225, Eng. News-Record, Leader-News Bldg., Cleveland, O.

GRADUATE engineer, 20 years railroad location, construction, investigations. 4 years South America. PW-258, Eng. News-Record, 10th Ave. at 36th St., New York.

HIGHWAY engineer with eleven years' experience in the location, design and construction of penetration macadam, bituminous concrete, sheet asphalt, plain and reinforced concrete roads and streets as resident engineer and superintendent wishes to make a connection with a state highway department, consulting highway engineer or paving contractor. PW-192, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

INDUSTRIAL engineer, mechanical, 32, sixteen years' experience, building construction, general plant maintenance, rolling mill, special equipment, purchasing, installations supervision, designing, technical; original; present executive capacity. Desires connection assistant or executive. PW-153, Engineering News-Record, 10th Ave. at 36th St., New York.

OFFICE manager or timekeeper. Seven years' experience with large contractor, on highway work in Pennsylvania and tunnel construction; age 30; married; best of reference; available immediately. PW-162, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

STENOGRAPHER typist (female), desires evening or home work. Experienced engineering, legal, commercial. PW-252, Eng. News-Record, 10th Ave. at 36th St., New York.

EVENING WORK WANTED

EVENING work, experienced draftsman, technical graduate wants evening work, mechanical, structural or topographical drafting, computations or designs. EW-254, Eng. News-Record, 10th Ave. at 36th St., New York.

WORK WANTED

Designing, Detailing Checking

For structural steel and reinforced concrete. Industrial, mechanical, structural engineering. Shop drawings. Central States Engineering Company, 28 East Jackson Boulevard, Chicago, Ill.

Typewriting and Duplicating

Specifications, proposals, bills of material, etc., expertly typewritten and duplicated. Low rates. Write for free sample and particulars. S. L. Stevenson, 5512 Thompson St., Phila., Pa.

SALESMEN WANTED

Steam Shovel Salesman

with several years' successful selling experience and with intimate knowledge of standard machines as well as knowledge of sales possibilities in various sections of the country. Write fully giving summary of work during past five years, references, state salary or commissions desired. All correspondence will be kept confidentially. SW-154, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

SALESMEN AVAILABLE

DEVELOPMENT, publicity, technical service, and sales engineering; academic and technical education and 15 years' experience in materials engineering and allied professional work; now engaged New York, removing to West Coast about August 1st, headquarters Seattle, branch connections San Francisco, Los Angeles, Canadian Northwest and Orient; your immediate correspondence invited. SA-261, Eng. News-Record, Tenth Ave. at 36th St., N. Y.

ENGINEER-salesman—Graduate engineer, experienced designer, estimator and executive, desires position with a reliable manufacturer or business concern as salesman or office assistant where a knowledge of engineering would be helpful; references. SA-222, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

GRADUATE mechanical engineer, structural draftsman and estimator. Desires sales position west of Chicago. Young, married. SA-246, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

SALES, technical graduate, 29, married, 3 years' construction and design, 3 years' sales; present employed. SA-147, Engineering News-Record, 10th Ave. at 36th St., New York.

PATENT ATTORNEY

PATENTS — Send for form "Evidence of Conception" to be signed and witnessed. Form fee schedule, information, free. Lancaster and Allwine, 272 Ouray Bldg., Washington, D. C.

EDUCATIONAL

Private Practical Instruction

Arithmetic, Algebra, Geometry, Trigonometry, Calculus, Engineering, Draughting, Designing, Architectural, Mechanical, Topographical, Structural, Surveying. Thorough preparation for Colleges, Technical institutions, Civil Service Engineering examinations, Axeman, Rod man, Transitmen, Inspectors, Highways, Sewers, Paving, Masonry, Engineering. L. Mondell, C. E., 50 East 42nd St., N. Y.

BUSINESS OPPORTUNITIES

Contractor

I wish to get in touch with a small contractor who would like to associate with a young civil engineer having a knowledge of accounting and willing to invest a small amount in the business. BO-213, Engineering News-Record, 10th Ave. at 36th St., New York.

Wanted

Well-equipped middle sized machine shop, preferably located in Middle West, for manufacturing patented pulp and paper machinery; acquiring financial interest preferred. BO-232, Eng. News-Record, 10th Ave. at 36th St., New York.

WANTED

Wanted

Several modern used transits and levels, best makes. Name lowest cash price, make, equipment and condition. W-248, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

SALESMAN WANTED

Salesman in Chicago territory to handle a well established, well advertised drafting room necessity. Knowledge of drafting desirable. Give references in application.

AS-228, Engineering News-Record
Leader-News Bldg., Cleveland, Ohio.

GROTON IRON WORKS

The entire plant of the Groton Iron Works, Groton, (New London) Conn. has been purchased by us and is now to be offered for sale, including all real estate, buildings, equipment and material. This plant, modern in every respect —was formerly operated by the U. S. Shipping Board Emergency Fleet Corporation. It occupies 34 acres of land with over 1800 ft. frontage on New London Harbor. Extensive wharves and switch tracks on the New York, New Haven and Hartford Railroad provide unusual shipping facilities. There are 15 buildings providing in excess of 200,000 sq. ft. of manufacturing space. The equipment is all in surprisingly good condition, owing to the fact that it has had very little use, and almost endless variety of machinery is available. Among the principal items are:

Cranes, Overhead Gantry and Jib
Fabricating Shop Equipment
Machine Shop Equipment
Pipe Shop Equipment
Blacksmith Shop Equipment
Joiner Shop Equipment
Electrical Equipment
Hoists, Elec., Steam and Shepard
Transformers, 15 to 667 K.V.A.
Pipe, Great Quantity
Motors 1 to 75 H.P.
Pneumatic Tools
Power Plant Equipment
Switch Board Equipment
Automobile Trucks
Yard Equipment
Pumps
Contractors' Tools

LOCOMOTIVE CRANES

McMyler Locomotive Crane, 8 wheel, 15 ton, 45 ft. boom, fully equipped, manufactured by McMyler Interstate Co., Cleveland, No. 3108.
Same as above—No. 3078.
Same as above—No. 3079.

FLAT CARS

3 Flat Cars, Std. Ga. 50,000 lb. cap., length 36 ft. 10 in.

LOCOMOTIVES

1 Std. Ga. steam 4-wheel, saddle tank, No. 54463, manufactured by Montreal Locomotive Works.

All of this equipment can be bought at very reasonable prices for quick sale. If you have a present need, learn at once what is offered here. It may mean a substantial saving for you. Communicate with us for complete itemized list and prices.

GROTON IRON LIQUIDATING CO.

Groton (New London) Conn.

WILL LEASE

Water Power Dam Site

at Kellys Ford, Va., 58 miles from Washington, 10 to 1500 hp. Preliminary work 40% completed. Land owned on each side of Rappahannock River reaching to Brandy Station. Factory sites at Remington, two miles. Factory sites at Southern Railroad Station and switch suitable for pulp mill, chemical factory, furniture factory or hotel. All kinds of timber. I also own valuable mines adjoining Rappahannock River—cobalt, radium, molybdenum, gold and feldspar. Large mill with machinery and assay office on mines. Also own Culpepper, Va. gold mine—678 acres, 25 ft. fall on Rappidam River. Old dam on mine.

JESSIE I. STEVENS
9 Atlantic Ave., Seagate, Coney Island, N. Y.
Phone: Coney Island 0888.

For Sale or Lease

Crushing Plant and Quarry

Complete. 145 acres—Green Stone—On W. M. R. R. near Gettysburg, Pa. 300-hp. steam power plant. Two gyratories—5 rolls—9 screens—storage bins. In shape ready to go. Will sell whole or part. Bargain for prompt action. Completely equipped for production of stucco or roofing granules.

Sheldon Slate Products Company
Granville, New York.

PROPOSALS WANTED

Purchase of Old Cummer Paving Plant

Notice is hereby given that sealed proposals, bearing the number (6298) of the bid and endorsed with the name of the bidder and the date of presentation, will be received at the office of the Purchasing Agent, at the City Hall, Saint Paul, Minnesota, until 2:00 P.M., Tuesday, July 1, 1924, for the purchase of an old Cummer Paving Plant, belonging to the Department of Public Works.

A bond in the sum of 10 per cent of the amount bid with two sureties, residents of the city of St. Paul, or a Surety Company bond in the same amount, or a certified check for ten per cent of the amount bid, must accompany each proposal as surety for the making and execution of a contract. Bidders having a general bond covering all bids on file in the office of the Purchasing Agent must so state on their bid.

The city reserves the right to reject any or all bids, or any part thereof.

Bids are to be submitted in duplicate upon the regular proposal blank, which may be obtained upon request in the office of the Purchasing Agent, and are subject to the conditions stated thereon. All bids will be opened in public, at the time above stated, by the Purchasing Agent, in the presence of the Purchasing Committee.

H. W. AUSTIN,
Purchasing Agent.

FOR RENT

Engines
Boilers
Pumps
Hoisters
Air Compressors
Locomotive Cranes

Marvin Briggs, Inc.
167 Sixth St., Brooklyn, N. Y.

FOR RENT

½-yd. **Erie Shovel**, with crane boom attachment, Massachusetts standard boiler. Traction wheel.

14-E **Rex Paver**, almost new. Just overhauled. This machine made State record for rapidity.

FOR SALE

No. 6 **Keystone Shovel**, Massachusetts Boiler, recently installed. $1000 worth parts. Ready-to work. $2000 and a bargain.

FRED T. LEY & CO., Inc.
Springfield, Massachusetts.
Phone: River 4160.

Second-Hand Transits and Levels

Guaranteed in Good Order and Adjustment
Write for New Bargain List
WILLIAMS, BROWN & EARLE, INC.
918 Chestnut St., Philadelphia, Pa.
Department D

LARGEST STOCK OF USED SURVEYING INSTRUMENTS IN THIS COUNTRY

Satisfaction guaranteed or money refunded. Write for complete list and catalogue of our high grade instruments and supplies for civil engineers, surveyors, mining, builders, contractors, etc.; 40 years' experience in repairing instruments of all makes at reasonable prices. Prompt service.
WISSLER INSTRUMENT CO
607 N. Broadway, St. Louis, Mo.

FOR SALE

Used Transits and Levels

BUFF, 46 Dey St., New York.

LUMBER AND TIMBER

50 carloads for immediate shipment. Mostly 12x12, in 10 ft. to 30 ft. lengths. Also about 100,000 ft. of 6x8 to 3x12. All heart L.L.Y.P., sound and clean.

Priced Right for Quick Sale

The Atlantic Wrecking Co.
Curtis Bay, Baltimore, Md.

Equipment For Sale

1—Bucyrus, Class 24, Dragline, 100-ft. boom, 3½-yd. Page bucket.
1—1250 yd. Iroquois Asphalt Plant.
1—Foote 21E Paver-Chute Discharge.
2—14-E Pavers.
3000 ft. of 8-in. Metaforms.
1—10-ton, 3-wheel Huber Roller-Scarifier.
1—9-ton and 1—10-ton Tandem Rollers.
1—No. 5 Allis-Chalmers Rock Crushing Plant and Building. (Bargain).
½-yd., ¾-yd., 1-yd. Slack Line Gravel Excavating Plants.
2—Traveling Derrick Outfits.

Carl Dunning Supply Company
825 Lemcke Bldg., Indianapolis, Ind.

CLARK TRUCTRACTORS

4—Clark Tructractors with one-yard dump bodies.

Price $2000 f.o.b cars Chicago.

Robert R. Anderson Co.
625 No. Kedzie Ave., Chicago, Ill.

Philadelphia's Most Extensive Stock of Used Contractor's Equipment

Hoisting Engines, Air Compressors, Pumps, Concrete Mixers, Rock Crushers, Buckets, Engines, Boilers, Motors, Etc.

A large and varied stock to select from at surprisingly low prices.

L. F. Seyfert's Sons, Inc.
Machinery Merchants Since 1878.
437 N. Third St., Philadelphia, Pa.

WATER WORKS EQUIPMENT

17—New Roberts filter tubs, 17 ft. dia. x 7 ft. depth, capacity each 454 gallons per minute.
48—Used tubs, same as above.
5—14-in. Class B Worthington double suction enclosed impeller (volute) centrifugal pumps 16 in. suction 14 in. discharge.
3—Allis-Chalmers 14 in. Type S Centrifugal pumps.
6—Allis-Chalmers 16 in. Type S Centrifugal pumps.

Write for Bulletin No. 22, Waterworks Equipment.

NASHVILLE INDUSTRIAL CORP.
Old Hickory, Tennessee

FOR SALE

Marsh-Capron Mixer

No. 0-¼-yd Rebuilt, complete with gasoline engine, hopper, water tank, etc. on wheels, good as new. *$600 f.o.b., N. Y.*

J. R. WEMLINGER & CO. INC.
149 Broadway, New York.

FOR SALE

DUMP BUCKETS

20—1½-yd. **Controllable Bottom Dump Buckets,** suitable for either concrete or dirt.

RENNOLDS EQUIPMENT CO.
719 Fisher Bldg., Chicago, Ill.
Harrison 2014.

VALVES AND FITTINGS

15—Carload Crane, Chapman, and Walworth valves and fittings, 2 to 16-in.

An Opportunity to Buy Cheap.

NASHVILLE INDUSTRIAL CORPORATION
Old Hickory, Tennessee

FOR SALE

14E **Koehring**—E. & B. Boom—Rubber Tires.
21E **Ransome**—E. & B.—Boom—Full Cats.

Subject to inspection any time.
JOHNSON & DEALAMAN
45 Clinton St., Newark, N. J.

TO HELP YOU

SELL USED EQUIPMENT

"Searchlight" Advertising

G-2

WANTED

WANTED

Stiff Leg Derrick—50 to 60-ft. Boom.
3-Drum Hoist and Boiler.
¾-yd. Clam Shell.

Frissell-Claeys Co. Inc.
Port Jervis, N. Y.

WANTED

6 Cu. Yd. Std. Gauge

DUMP CARS

Must be in good condition and handy for inspection.

E. R. MILLER, Boonville, N. Y.

PUMPS WANTED

Outside end packed duplex pot valve, bronze plunger steam pumps. All sizes.

WICKES MACHINERY CO.
Claremont and West Side Aves.,
Jersey City, N. J.

WANTED

SHEET STEEL PILING

For Hydro Electric Project. 13 to 19 ft. lengths. Also longer piles suitable cutting these lengths.

W-180, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED

STEEL PILING

any part of
180 piles about 25-30 ft.
360 piles about 40-45 ft.
12 Corner piles.

W-182, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED IMMEDIATELY

20—4-yd. 36-in. ga. **Dump Cars.**
2—14 or 18-ton, 36-in. ga. **Locomotives.**
1—1½-yd. **cat. Steam Shovel.**
1—**Cat. Gas Crane.**

W-243, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED

18 Ton 36 in. Gage Saddle Tank Dinkey

Not over 10 years old. Prefer Vulcan.

W-242, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED

Orange Peel Bucket

1½-yd. Hayward, 3 blade heavy type.

Good condition.

W-227, Engineering News-Record
10th Ave. at 36th St., New York City.

WANTED

LOCOMOTIVE CRANE

On 4 or 8 wheels, with double drums. Also ½-yd. **Clamshell Bucket.**

BOX 842, NORFOLK, VA.

WANTED

LOCOMOTIVE CRANES

1—40-ton; 1—30-ton, with 70-ft. booms. Late Model.

FRAZIER-DAVIS CONST. CO.
Arcade Building, St. Louis, Mo.

TO HELP YOU

GET WHATEVER YOU NEED

"Searchlight" Advertising

G-4

USED EQUIPMENT

AND NEW, OFFERED FOR RE-SALE

Space for these advertisements is sold by the advertising inch—30 inches to a page. The price per inch is based on total space used—multiply ad space by number of insertions.

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RATES FOR LARGER SPACES, OR SPACE ON A YEARLY BASIS, FURNISHED ON REQUEST.

E. N.-R.

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For Rent—For Sale

Locomotive Cranes

1—Type "J" 35-ton, McMyler, 8-wheel, standard gauge, bucket operating, 70-ft. boom. One year old.

2—Erie Type "B" Traction Wheel, 32-ft. boom.

Locomotives

1—18x24, 50-ton, 6-wheel Switchers, standard gauge.

4—21x30, 95-ton Consolidations, standard gauge.

3—10x16, 18-ton Saddle Tank, 36-in. gauge.

Steam Shovels

1—Thew Model "O," traction wheels, ½-yd. dipper.

Steam Shovels—Cont.

1—Model 31 Marion, caterpillar traction, high lift boom, 22 ft. 6 in., dipper stick, 18 ft. 6 in., ¾-yd. dipper. One year old.

2—Erie Type "B," traction wheels, ¾-yd. dipper.

2—Marion 28, traction wheels, 5/8-yd. dipper.

3—Marion 60, standard gauge, 2½-yd. yd. dipper.

Cars

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2—Western Spreaders, standard gauge.

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1—Model 28 Marion, traction wheels. Shop 3374, ⅝-yd. dipper.
3—70C Bucyrus. Shop Nos. 1277, 1426 and 1582. 2½-yd. dippers.
4—70-ton Bucyrus. Shop Nos. 920, 977, 1233 and 1322. 2½-yd. dippers.
1—60C Bucyrus. Shop No. 1388, 2½-yd. dipper.
1—Model 60 Marion. Shop No. 2404, 2¼-yd. dipper.
1—Model 70 Marion. Shop No. 2693, 3-yd. dipper.
2—Osgood 73, Shop Nos. 308 and 317, 3½-yd. dippers.

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1—1½-yd. Coal Loading Dipper for Marion 36 Steam Shovel.
1—Boom for 70-ton Bucyrus, length 29 ft.
1—Boom for Marion 60 or 61 Shovel, length 35 ft., 22-ft. dipper arm, 1½-yd. dipper, long jack arms, etc.

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1—Std. gauge Western Spreader Car.
3—36-in. gauge Western Spreader Cars.
1—36-in. gauge Oliver Spreader Car.

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13—12-yd. Western Air Dump Cars, 19-ft. beds, box girder doors.
26—12-yd. Western Hand Dump Cars, 19-ft. beds, 60,000 lb. cap. trucks, M.C.B.
4—4-yd. Continental, 36-in. gauge Side Dump Cars, wood beds, steel draw sills.
8—4-yd. Continental, 36-in. gauge Side Dump Cars, wood bed and wood sills.
17—4-yd. Western, 36-in. gauge, Wood Sill Dump Cars, truss rod doors.
8—3½-yd. Peteler 36-in. gauge side dump cars, wood sills and wood beds.
6—1½-yd. Western, 24-in. gauge Dump Cars, steel truck sills.

LOCOMOTIVES—Standard Gauge

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1—17x24 Davenport 6-wheeled Switcher, with tender. Shop No. 1269. Steam pressure 180 lbs. Wt. 47 tons.
1—16x24 Baldwin 4-wheeled Switcher, with tender. Shop No. 37644. Steam pressure 180 lbs. Wt. 40 tons.
1—16x24 American, 4-wheeled Saddle Tank. Shop No. 59402, built 1918. Wt. 49 tons, A.S.M.E. boiler, 180 lbs. pressure, air brakes.
1—16 x 22 C. M. & St. P. Ry., Class J-2, 4-wheeled switcher. Weight 32 tons.
1—13x18 American, Saddle Tank. Shop No. 55248, built 1916. Wt. 32 tons.
1—11x16 Davenport 4-wheeled Saddle Tank Locomotive. Shop No. 1027. Wt. 20 tons. Steam brakes.
2—11x16 American 4-wheeled Saddle Tank Locomotives. Shop Nos. 42801 and 46519. Wt. 21 tons. Steam brakes, automatic couplers.

36-in. Gauge

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1—10x16 Vulcan Dinkey. Shop No. 1732. Weight 18 tons.
1—10x16 Baldwin Dinkey. Shop No. 34550. Weight 18 tons.
2—10x16 Porter Dinkies. Shop Nos. 3400 and 3509, steam brakes. Wt. 18 tons.
1—10x16 Davenport 18-ton Dinkey. Shop No. 1026. British Columbia boiler.
2—11x16 Davenport Dinkies. Shop Nos. 710 and 711, 150 lbs. steam. Wt. 20 tons.
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24-in. Gauge

1—6x10 Davenport Side Tank Dinkey. Shop No. 1307. Wt. 7 tons.
1—5x10 Shay geared, Lima No. 2678. Wt. 12 tons.

DRAGLINE EXCAVATORS

1—Class 7 Bucyrus, steam. Shop No. 798, mounted on skids and rollers, 42-ft. boom, 1-yd. bucket.
1—Class 14 Bucyrus, steam. Shop No. 748, mounted on caterpillars; 60-ft. boom, 2-yd. Page bucket.
1—Class 24 Bucyrus Electric. Shop No. 801, mounted on self-propelling trucks. 100-ft. boom, 3½-yd. Page bucket. A.C. motors, 440 or 220 v., 3 ph., 60 cy. Lighting plant.

CRANES

1—Erie Crane Boom, 33 ft. long, drum and necessary equipment for converting type B Erie shovel into crane.
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5—36 Ga. Steam, Davenport, Porter & Vulcan.
2—24 Ga. Plymouth Gas, 3 and 6 tons.
1—36 Ga. Amer. 3½ ton Gas.
2—St. Ga. Amer. 50-ton Switcher.

Cranes

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2—Northwest No. 104 on caterpillar.
2—O&S 20 and 30 ton Std. Ga.
1—Tyre B Erie on cats.
1—Browning 15 ton, std. ga.

Shovels

8—Marion Models 28, 31, 35, 60, 91 and 300.
4—Bucyrus Model 70C and 70 ton, R.R. type.
1—Bucyrus Model 80-C, mounted on Cat.
1—No. 4 Keystone Excavator.
2—Erie Type "B" Caterpillar Traction.
2—Bucyrus 35-B, Caterpillar.

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Buckets

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1—1 yd. Class "E" Hayward.

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4—7x10, D/D Lidgerwood, Lambert, Mundy.
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1—Mundy, 7½x10, D/C, D/D, with atttached swinging gear, with boiler.
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1—Pioneer ¾-yd. Cableway Excavator Bucket, complete with cable, blocks and sheaves for 350 ft. span, and one 8½x10 double drum hoist with boiler.

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1—15-ton, 8-wheel, O. & S., 40-ft. boom.

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7-ton Lidgerwood. Head tower 115 ft., tail tower 105 ft., 1370-ft. span. Complete with carriers, table, blocks, etc. With 1—10x12 Reversible Lidgerwood Steam Hoist. No boiler.

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12—Western 1½-yd., 24-in. ga. Dump Cars.

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8—Three-Drum Hoists, with or without boilers. Sizes, 9x12, 9x10, 8¼x10, and 7x10, with separate swingers for derrick work. All makes.

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1—6-ton Burton, 36-in. ga. gas.

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5—Tandem; 1—10-ton Iroquois 1—8-ton Erie; 1—5-ton Iroquois; 1—5-ton Buffalo-Pitts; 1—3-ton Erie; all steam.

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36—Pcs. Lackawanna 14x⅜ in.—10 Pcs. 22 ft. 6 in. long, 5 Pcs. 24 ft. long, and 21 Pcs. 28 ft. long.

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2—Type O Thew, on traction wheels with ⅝-yd. dipper.

1—Type O Thew, traction wheels with ⅝-yd. dipper —shipper shaft.

4—Keystone Excavators. 3—No. 3. 1—No. 4.

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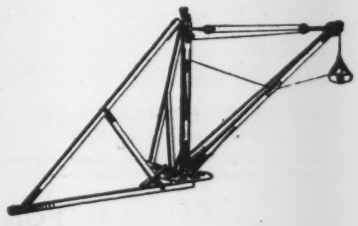

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810 ft. OCB Chicago, 2 stage belt.
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Osgood 18 Tract. and Cats.
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1—12-ton 8-wheel standard gauge Osgood with 40-ft. boom.

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2—5x8 Worthington Triplex Plungers with motor base.
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4—7½x5x6 Worthington Duplex piston pattern.
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2—**Bails** for lifting above boxes.

6—**Rocker Dump Cars,** 27 cu.ft. capacity, 24-in. track gauge, equipped with spring draft rigging, and link and pin coupler, and with twin spring pedestal roller bearings.

4—**Rocker Dump Cars,** same specifications as above, and also equipped with brake acting on all four wheels.

All above cars and boxes manufactured by the Easton Car & Construction Company.

15-in., 20-in., 24-in. **Steel I-Beams,** 16 to 30 ft. long.

Quantity of 60 lb. and 65 lb. **Rail.**

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1—"Lidgerwood" Class "B" Dragline Excavator, truck mounted, 60-ft., or 75-ft. boom, 2-yd. or 1½-yd. bucket.
1—"Lidgerwood" Class "B" Steam Dragline Excavator, mounted on four double flanged wheels. Boom is 60-ft. with 15-ft. extension and handles 1½-yd. or 2-yd. bucket.
1—"Marion" Model 21 Dragline Excavator and Crane, mounted on caterpillars; 32-ft. boom, ¾-yd. bucket, entire drag or clam shell.

PUMPS
1—Worthington 6-in. centrifugal.
2—Weinman steam-driven automatic.
1—Dean, 7½x5x6.
1—Cameron steam piston, 7x6x7.
1—6-in. American centrifugal, dir. conn. to vert. steam engine.
1—12-in. R.H. "Morris" horiz. cent. unwatering pump, dir. conn. to steam engine.
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1—14-in. Allis-Chal., double suction, dir. conn., Bronze Impeller. Pump and motor.

1—10-TON HUBER STEAM TRACTOR

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1—18-ton Davenport standard gauge.

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Orten & Steinbrenner, 20 ton.

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6/10 kva. to 400 kva.

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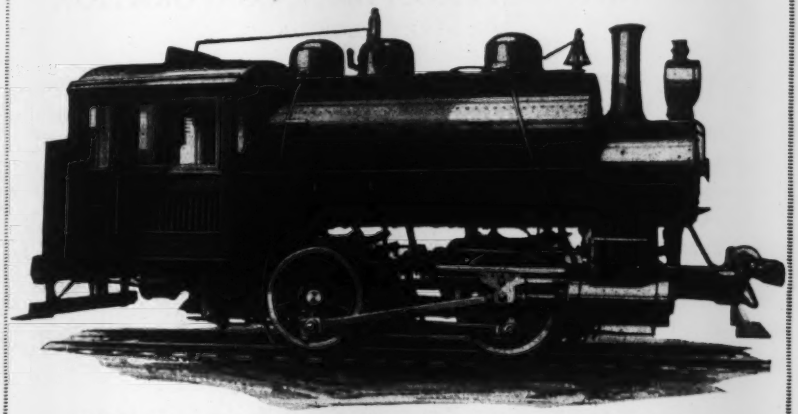

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1—63 ton, 2-6-0, Mogul type, American. Recently this locomotive was thoroughly overhauled and has passed I.C.C. inspection.

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Above Equipment Located at Chicago

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1—70CBucyrus, Railway type, Shop No. 1582, standard gauge, 2½-yd. dipper.
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1—Type 060 Brooks, 40-ton, 6-wheel switcher, standard gauge, sloping tender.

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1—10-ton Austin 3 wheel, gasoline, single cylinder.

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1—Class 24, Bucyrus, steam operated, skids and rollers, 100-ft. boom, 3½-yd. bucket.
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8,000 gal., all-steel construction, with steam, coils. Bargain price. In stock for immediate shipment, cars of any kind, both passenger and freight.

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2—24-in. gg., 3½-ton **Gas Dinkeys.**
1—Gasoline driven **Portable Saw Outfit.**
2—½ and ¾-yd. **Smith Concrete Mixers.**
8—Standard gauge **Boarding Cars.**
1—Sullivan WG3 **Air Compressor** and **Electric Motor.**
1—10½-in. cross compound **Air Compressor. Portable** with boiler.
5—12-yd. **Western Dump Cars.** Panel doors.
1—¾-yd. Model 18 **Osgood Dragline Machine.**

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1—526-ft. Chicago-Pneumatic NSBE 14x12, motor and fittings.
1—66-ft. Ingersoll-Rand FR-2 steam driven, all fittings.
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4—50-hp. Clyde (new) DD & Sw. 220 v. DC motor.
2—65-hp. Clyde (new) DD & Sw. 220 v. DC motor.
1—8¼x10 Clyde DCDD with B & Sw.
1—8¼x10 Buffalo DC3D with boiler.

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MULBERRY, FLORIDA

2—Standard gauge 17x24 cylinder **Schenectady Locomotives.** Good condition.
2—**Porter** 36-in. gauge, 4-wheel **Saddle Tank Locomotives,** 10x16 and 10x14 cylinders. Good condition.
5—**Oliver** 5-yd. side **Dump Cars,** 36-in. gauge. Fair condition.
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1—14,000-gal. **Cypress Water Tank.**
1—20,000-gal. capacity horizontal **Oil Tank.** Good condition.
2—**Erie City,** 250 hp., 150 lb. steam pressure, **Water Tube Boilers,** equipped with Foster Superheaters.
2—**Erie City,** 270 hp., 185 lb. steam pressure, Sterling type, vertical **Water Tube Boilers,** equipped with Foster Superheaters.
1—**Return Tubular Boiler,** 125 hp., 135 lb. pressure.
1—**Bury Cross Compound** Air Compressor, class SCS, size **14x24x16x24,** with McGowan condenser pump size 8x12x12.
1—**Ingersoll-Rand** Class C. Lentz Engine Driven **Air Compressor,** Air Cylinder 26¼x24, Steam Cylinder 19x24.
1—Tandem Compound **Lentz Engine,** size 17x30x30.
1—**Roger-Higgins Fuel Oil Pumping Outfit,** consists of 2—5¼x3½x5 Worthington Duplex Steam Pumps complete with oil heater and pressure governor, all mounted on one frame. Excellent condition.
1—**Worthington-Laidlaw** Feather Valve **Air Pump,** Crank and Flywheel Type, size 7x12x6. Practically new.
Several **Fairbanks-Morse, Worthington, McGowan, Triple Expansion Pumps,** also **Boiler Feed Pumps.**

FOR SALE OR FOR RENT

Concrete Mixers, Lakewood Concrete Towers, Hoisting Engines, Derricks, Pumps, Gasoline Tractors, Steam Hammers, Buckets and Compressor outfits.

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FOR SALE

1—8¼x10, 3-dr. **Hoist** and **Boiler.**
1—6-ton **Kelly-Springfield Roller.**
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2—10x16-36-in. **Porter Locomotives.**

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5-yd. **Manganese Steel Dipper.**
No. 2 **Sullivan Air Compressor**
Ottumwa Box Car Loader.
All good condition, at fraction of value.

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1—11-hp. **National Builder's Electric Hoist,** 220 v., 2 or 3 ph., 60 cy. Like New.
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Call or Write.

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250 hp. (Natural Draft) Cross Drum **Watertube Boilers.**
8¼x8 **Lidgerwood Hoists.**
10x6x12 Horizontal **Duplex Pumps.**
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10-in. **Centrifugal Pumps** direct connected to Vertical Engines.
10 kw. Troy and Engberg **Generator Sets.**
1-ton Frick and Triumph **Refrigerator Units.**
Tanks of all sizes.

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21 ft. dry material. Used to end of last season. Can be seen at our yard.
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in serviceable condition suitable for switching and industrial service. Complete blue prints furnished on request.

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16—19x26, 65-ton Moguls. Built 1906. 190-lb. steam, 13-ft. 4-in. wheel base, 50-in. driving wheel centers. Steel U-Frame tanks.
3—18x26, 57-ton Moguls. Built 1910. 180-lb. steam, 13-ft. 0-in. wheel base, 50-in. driving wheel centers. Steel U-Frame tanks.
3—19x24, 52-ton Moguls. 160-lb. steam, 12-ft. 8-in. wheel base, 50-in. driving wheel centers.
2—19x28, 75-ton Moguls. Built 1906, 200-lb. steam, 14-ft. 2-in. wheel base, 56-in. driving wheel centers. Steel U-Frame tanks.
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4—20x26, 76-ton Consolidations. 180-lb. steam, 14-ft. 11-in. wheel base. 50-in. driving wheel centers. Steel U-Frame tanks.
6—19x26, 69-ton Ten Wheelers. 180-lb. steam, 12-ft. 8-in. wheel base. 62-in. driving wheel centers. Steel U-Frame tanks. Some machines re-built and new fire boxes applied as late as 1920.
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1—17½x26, 50-ton, 8-wheel Standard. 145-lb. steam pressure.

Machines furnished as coal or oil burners. Inspection invited. Write or wire us for further particulars.

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Ready for Immediate Delivery

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ROAD ROLLERS

2—Buffalo Pitts 10-ton 3-wheel steam road rollers.

STEAM SHOVEL

1—14-B Bucyrus on traction wheels. ASME boiler—thoroughly overhauled. Can be rented.

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100 tons 90-lb. ASCE relaying rails with angle bars—first class condition.

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Rugged and powerful. They are being used

For 10-TON JOBS.

Your Most Critical Inspection Solicited.

$1500.00, subject prior sale

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3—Dipper Dredges.
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Excellent Condition

Locomotive Cranes, Standard and Narrow Gauge **Flat** and **Box Cars, Machine Tools, Boilers, Engines, Motors, Generators, Contractor's Equipment,** etc. Priced low to move quickly.

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1—**Koehring Paver**, 21-E half caterpillar, power hoist, batchmeter, all fittings.
1—10-ton **Monarch** 3-wheel **Steam Roller.**
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44—**Batch Box Trucks**, 24-in. gauge (Western).
68—**Wood Batch Boxes**, 30-cu. ft. bottom dump. Also 8 **Seavern's Bin Gates**, 2 **Road Plows**, 1 **Belt Conveyor** without engine, 1 85-lb. standard gauge Turnout, and 1 90-lb. standard gauge Turnout.

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Two Bag Koehring Concrete Paver

Steam operated—Good condition. Suitable for alley paving. Located at Plainsboro (near Princeton) N. J.
Price $1000.00.

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Road-Rollers; Pavers; Shovels; Keystone Excavators; Locomotives; Track; Dump and Flat Cars; Hoists; Cranes; Graders; Finishers.

All necessary Equipment for complete plant.

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5-ton tandem steam. Never been used. Will make an attractive price for quick sale.

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1—15-ton Brownhoist Locomotive Crane, 8 wheel MCB, 41-ft. boom, double drums, A.S.M.E. Boiler.

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1—Electric 15-ton Brownhoist, full revolving crane, mounted on Gantry Tower, 44-ft. boom.

1—Electric Link-Belt, 15-ton full revolving crane, 50-ft. boom.

1—Electric 10-ton Brownhoist 4 wheel Locomotive Crane.

Send for special list on Steam and Electric Hoisting Engines. Steel and Wood Stiff Leg Derricks.

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Contractors' Equipment
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STEAM SHOVELS
3—Type "B" Erie, on caterpillar.
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2—10x16 36-in. gauge S.T. Porters.
2— 9x14 36-in. gauge S.T. Vulcans.
1—16x24 Std. gauge Baldwin Switcher.

HOISTING ENGINES
1, 2 and 3 drum, all sizes, steam, gas and electric.

Air Compressors	Cranes
Pumps	Derricks
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Everything for the Contractor. Write for List.

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FOR RENT OR SALE
BUCYRUS SHOVELS

2—18-B, traction wheels, 7/8-yd. dippers. Thoroughly overhauled.

GENERAL EQUIPMENT Company, Inc.
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¾-yd. Type "B" **Erie Shovel.**
10-E **Ransome Paver,** traction wheel, boom and bucket, $1200.00.
7-E High Drum **Rex Paver,** traction wheel, $800.00.
21-E. 1922 **Foote Paver,** caterpillar, new gas engine, $2700.00.
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1—15-hp. **Mead Morrison Car Puller,** $800.00.
10,000 ft. Second hand **Cable.**
36-in. gauge **Fordson Locomotive,** $600.00.

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We having purchased the remaining HOISTS and DERRICKS from THE ELECTRIC HOIST AND DERRICK COMPANY, including HOIST PARTS and DERRICK FITTINGS, beg to announce that these HOISTS and DERRICKS are equal to any that were in the original purchase from the HOG ISLAND SHIPYARD, and are offering them to the public at the following prices: **HOISTS, $1600 each f.o.b. Baltimore, Maryland. DERRICKS, $600 each f.o.b. White Hill, Pa., at Harrisburg.**

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Baltimore, Md.

¾ YD. OSGOOD STEAM SHOVEL
at Richmond, Va.

This shovel is in first class condition. Its unusually low price is due to the fact that we are not in the used equipment business for profit, but simply to dispose of an occasional "trade-in."

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FOR SALE
STEAM SHOVEL
Osgood 18

J. J. McGARRY,
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No. 40. Perfect condition. Bargain if sold immediately. Convenient payments arranged. Inquire,

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Type "B" Erie Caterpillar, **High Lift Steam Shovel.**
Type "B" **Erie Crane,** 36-ft. boom, ¾-yd. bucket.

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FOR SALE
Marion 36—Shovel

Caterpillar traction. Steam power. 1½-yd. bucket.

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FOR SALE
Type "B" Erie Traction Shovel

¾-yd. bucket. Mass. Std. Boiler. Just released and in first class condition.

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Shovels For Sale

1—¾-yd., traction type, shipper shaft Thew steam shovel, $3700.
1—¾-yd., similar to the shovel above, with horizontal crowding device, $2400.
Both shovels have just completed an operation and are in excellent working order.

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ERIE SHOVEL

Type B, steam, traction, ¾-yd. with mang. teeth, 3 heavy oak mats, many extra parts, new boiler, boom hoist.
Guaranteed in A-1 condition.
Will sell cheap.

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Bucyrus 225 **shovel** Ohio Delivery.
Marion 251 **shovel** Kansas Delivery..
O. & S. 30-ton **Locomotive crane** 80-ft. boom; new 1920 60-in. ASME **boiler.**
Ore Cars 10-40 ton Wood underframe.

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STEAM SHOVELS

Erie A, also B, Traction and Caterpillar.
Osgood, Thew, Marion, Bucyrus, Revolving.
¾-yd. Marion Traction—Sale or Rent.
Marion, Osgood, Bucyrus R.R. Shovels.
Cars—Locomotives—Cranes

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1—**Erie Shovel,** ¾-yd. Traction, Type B. High Lift, No. 1083.
1—**Fordson Tractor,** with winch attachment.
5—1½-yd. **Eagle Dump Bottom Wagons.**
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Used on one job, overhauled and in good condition.

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1—25-ton Industrial, 8-wheel, D.D. 50-ft. boom, No. 3523.

1—20-ton Brown Hoist, 8-wheel, D.D. 50-ft. boom, No. 6486.

1—20-ton Link-Belt, 8-wheel, D.D. 50-ft. boom.

1—20-ton Browning, 8-wheel, double drum, 50-ft. booms, No. 1149.

1—22-ton Industrial, 8-wheel, double drum, 40-ft. boom, equipped with 8½-kw. Engine Generator Set, 1717.

1—25-ton Brown-Hoist, broad gauge, 75-ft. boom, electric operated.

1—12-ton O. & S., 8-wheel, 50-ft. boom, DD.

Hoisting Engines

1—50-hp., 3-drum Lidgerwood, electric, (no motor).

1—75-hp., 3-Drum Electric Hoisting Engine, 3 ph., 60 cy., 220 v.

2—75-hp. 2-Drum Electric Hoisting Engines.

2—8¼x10 American Double Cylinder, Boiler Mounted.

BUCKETS

1—1-yd. Williams Clamshell Bucket.

1—¾-yd. O & S.

STEAM SHOVELS

1—Marion 61, 2½-yd. dipper, railroad type.

1—Marion 21, ¾-yd. dipper, cat. mounted.

Tower Cranes

7—Link-Belt, 90-ft. booms, full revolving, self-propelling, A.S.M.E. boilers, mounted on 30-ft. substructures. Perfect condition.

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18—7½-ton, all steel, Stiff Leg Derricks, 65 to 87-ft. booms, 42-ft., 8-in. masts, 12-ft. dia. Bull-Wheel—complete with steel stiff legs and all fittings.

CATERPILLAR BACKFILLERS

1—Austin with boom and bucket, gasoline operated.

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Philadelphia, Pa.

PRACTICALLY NEW EQUIPMENT

LOCOMOTIVE CRANES

1—17-ton O&S, 50-ft. boom, 8-wheel, M.C.B., 42-in. magnet and generator.
1—17-ton Industrial, 8-wheel, M.C.B., 50-ft. bm.
1—15-ton Ohio, 40-ft. boom, 8-wheel, M.C.B., 1-yd. bucket.
1—Austin No. 4 caterpillar, 35-ft. boom, ¾-yd. bucket.
2—Northwest 104, 40-ft. booms, new 1922.
1—Northwest 105, 40-ft. boom, ¾-yd. bucket.

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1—Class 24 Bucyrus, full caterpillar, 100-ft. boom, 3½-yd. bucket.
2—Northwest 104, 40-ft. booms, 1-yd. Paige bkts.

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1—Marion 36, high lift, caterpillar, 1¾-yd. dipper, new 1921.
1—Model 31 Marion, caterpillar, 1-yd. dipper, new 1920.
1—Erie B, caterpillar, ¾-yd. dipper.
2—Erie B, traction wheel, ¾-yd. dippers.
2—70-ton Bucyrus, railroad type, 2½-yd. dippers.

BUCKETS

1—One yard Dreadnaught type Blaw-Knox with teeth, 3 weeks service.
2—Williams, 1¼-yd. Hercules type.

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FOR SALE

Locomotive Crane

15 to 18 ton, eight wheel O&S, 40 ft. Boom, with Bucket. Available immediately.

Equipment Corporation of Amer.
Land Title Bldg., Philadelphia, Pa.

FOR SALE

LOCOMOTIVES

1—11x16 (21 ton).
1— 7x12 (9 ton).
Excellent condition.

W. J. GROSE CO.
237 Oliver Bldg., Pittsburgh, Pa.

FOR SALE OR RENT

LOCOMOTIVE CRANES

15-ton **Industrial**, 40-ft. boom, 7½ kw. generator.
25-ton **Ohio**, 50-ft. boom.
15-ton **Link Belt, Electric**, 50-ft. boom.
15-ton **American Hoist and Derrick**, 40-ft. boom.

Hoisting Machinery Co.
50 Church St., New York City.

FOR SALE

Cranes—Shovels

1—No. 45 Bucyrus, 1¾-yd. **R.R. Steam Shovel**, in A-1 used condition. Price, $4500. Located Minnesota.
1—No. 1-T Monighan **Gasoline Dragline**, 1-yd. Page bucket, 50-ft. boom. New walker just installed.
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8-wheel M.C.B. Loco. Crane, 15 ton, 50-ft. boom, bucket handling. Boiler new, entire crane rebuilt and in excellent condition.

BROWN & LOWE and LAW BROS.
General Contractors, Cohoes, N. Y.

LOCOMOTIVE CRANES

BARGAIN

1—**Browning, 15-ton**, 4-wheel, std. ga., 38-ft. boom, bucket handling.
1—25-ton, 8-wheel **Browning**, 50-ft. boom.

RENNOLDS EQUIPMENT CO.
718 Fisher Bldg., Chicago, Ill.
Harrison 2014.

LOCOMOTIVE CRANES

15-ton Ohio, 8-wheel, Bucket Handling, $5800.
20-ton McMyler, 8-wheel, Bucket Handling, $5800, fine condition, immediate delivery.
Air Compressors, Pumps, Engines, etc.

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IDEAL YARD CRANE

5 Ton, 97-ft. Span.
3—Motor **Overhead Electric Traveling Crane**, 95% new.
Immediate delivery car or boat New York.
Also 375 ft. **Double Steel Runway Girders and Rails.**

N. B. PAYNE & CO.
Crane Specialists
Telephone Rector 9680. 25 Church St., New York.

FOR SALE

1,250-yard **Iroquois Asphalt Plant.**

3—3,000-gal. **Asphalt Tanks** with Agitators.

1—60 hp. Locomotive type **Boiler and Engine.**

1—14-E 4-bag **Smith Mixer**, half caterpillar.

Will sell at fifty (50%) per cent of cost, has been used only three months, will make easy terms to purchaser.

B. D. WRIGHT
522 Market Street, Chester, Pa.

LOCOMOTIVE CRANES

Type 3 Browning 8-wheel Locomotive Crane, built 1917.
18-ton O. & S. 8-wheel, 50-ft. boom, built 1918.

LOCOMOTIVES

78-ton Baldwin 6-wheel Switcher, built 1914.
52-ton American 6-wheel Switcher, built 1909.
60-ton 2-truck Shay geared, built 1920.

Also other locomotives and locomotive cranes, and steam shovels and steel rails. Complete list on request.

Birmingham Rail & Locomotive Co.
Birmingham, Ala.

CRUSHERS

1—Kennedy No. 10.
1—Kennedy No. 6.
Manganese fitted, nickel steel shafts.

LOCOMOTIVE

1—Porter 10x16-in. Saddle Tank, 36-in. gauge.

LOCOMOTIVE CRANE

1—O. & S. 12-ton, 8-wheel, bucket handling.

A. J. O'NEILL CO.
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HOISTING ENGINES

DOUBLE CYLINDER, THREE DRUM WITH BOILER MOUNTED ON SAME BASE
No.
—7½-in.x12-in. Mundy, ASME, 125 lb.
115—8-in.x12-in. Mundy.

DOUBLE CYLINDER, DOUBLE DRUM WITH BOILER MOUNTED ON SAME BASE
No.
75—6-in.x10-in. Mundy.
102—9-in.x10-in. Lidgerwood.

DOUBLE CYLINDER, SINGLE DRUM WITH BOILER MOUNTED ON SAME BASE
No. 38—6¼-in.x10-in. Flory.

DOUBLE CYLINDER, THREE DRUM WITH SWINGING GEAR ATTACHED SKELETON
No. 89—7-in.x10-in. Lidgerwood.

DOUBLE CYLINDER, THREE DRUM SKELETON
No.
64—7-in.x10-in. American, place for Boiler.
74—7-in.x10-in. Flory.
98—8¼-in.x10-in. Lidgerwood.

BUCKETS—Clam Shell
No.
12—11—1¼-yd. Hayward New. Class E. Regular bowl.

BOILERS
Economic and Locomotive Type
150-hp. Erie Economic, 100 lbs.
9—100-hp. Locomotive H. S. & G.
15—90-hp. Ames, 150 lbs. A.S.M.E. New.
11—3-80-hp. Locomotive on wheels, 125 lbs. A.S.M.E. New.
80-hp. Locomotive, A.S.M.E. 125 lbs.

MISCELLANEOUS
No.
1—Byers Type C Auto Crane.
1—2—25 kw. Generators, direct connected to 4-cylinder Buffalo Gasoline Engines. New.
1—12-ft. Diameter Steel Bull Wheel.
2—18-ft. Diameter Steel Bull Wheel.
2—2—5 kw. Generators, direct connected to 4-cylinder Winton Gasoline Engines. New.
4—10x16-in. Baldwin, 36-in. Gage Locomotive.

DOUBLE CYLINDER, DOUBLE DRUM WITH SWINGING GEAR ATTACHED SKELETON
No.
71—7½-in.x10-in. Lambert.
72—8½-in.x10-in. Lambert.

DOUBLE CYLINDER, DOUBLE DRUM SKELETON
No.
20—6½-in.x12-in. Mundy.
94—7-in.x10-in. Lambert.
101—7-in.x10-in. Flory.

DOUBLE CYLINDER, SINGLE DRUM SKELETON
No.
7—5-in.x6-in. Lidgerwood, reversing link.
25—5-in.x8-in. Lidgerwood, reversing link.

SWINGING ENGINES
No.
88—4½-in.x6-in. Mead-Morrison.
90—4½-in.x6-in. Mundy.
107—4½-in.x6-in. National.
67—5-in.x6-in. Lidgerwood.

GASOLINE HOISTS
121—5 hp. Fairbanks Bull Dog Engine geared to Single Drum Hoist.

Sharp and Conway Sts. **LOUIS A. TARR, Inc.** Baltimore, Md.

(6)

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Highway Bridge Through Truss

352 ft. 0 in. Span
32 ft. 0 in. Roadway

40 other bridges

J. NORMAN JENSEN, C. E.
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Practically New

P. & H. Trencher

24-in. to 28-in. Trench, 7 ft. 6 in. depth, Wheel Type No. 105.

Steam Shovels, Etc.
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* 1—15-20-ton Ohio, 50-ft. boom.

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Owing to the holiday, Friday, July 4th (Independence Day)—the *"Searchlight"* pages of the July 3rd issue of *Engineering News-Record* will close for press earlier than usual. Copy should reach us as follows:

Display Ads—Copy required by 10 A. M., Saturday, June 28th.
Want Ads—Copy required by 10 A. M., Monday, June 30th.
Proposal Ads—Copy received up to 11 A. M., Tuesday, July 1st.

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1—Marion high lift, model 36, catr. No. 4750. 15,000
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2—Thews type O, ⅝-yd. dippers, each..... 2,500
1—Thew type special O, long boom and stick, 1-yd. dipper, shipper shaft 3,500
1—Erie type B, traction wheels No. 1111..... 3,500
1—Keystone model 3, skimmer and ditcher scoops, just out of our shop..... 1,800
1—Bucyrus 80-B catr., 48-ft. boom, 2-yd. dipper
1—Marion model 21, catr., No. 4890, ¾-yd. dip. 7,500
1—Marion model 60, 2½-yd. dipper, No. 1463. 6,500

CRANES

1—O&S steam catr., 35-ft. boom, ¾-yd. bucket. 4,500
1—O&S steam trac. wh. 30-ft. bm., ¾-yd. bkt. 2,500

CRANES—Continued

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1—Little Giant, trac. wh., 35-ft. bm., ¾-yd. bkt. 2,800
1—Koehring, model 3, gas caterpillars, 45-ft. boom, 1-yd. bucket..... 12,000
1—Osgood, model 29, traction wheels, steam, 40-ft. boom, 1-yd. bucket..... 5,500
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1—Ohio 15 ton, 8 wh., 45-ft. bm., 1-yd. bkt. 5,500
1—McMyler 20 ton, 8 wheel, 50-ft. boom..... 6,000
1—N.W. catr. gas crane, 40-ft. bm., 1-yd. bkt. 7,500

MISCELLANEOUS

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2—Plymouth gas 6 ton, 24-in. ga. loco's, each. 1,900
2—American gas 4 ton, 24-in. ga. loco's, each. 1,250
1—Plymouth gas 6 ton, 36-in. gauge loco's.... 2,000

MISCELLANEOUS—Continued

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5—Koppel double truck track laying cars, each.. 100
120—Koppel & Lakewd. stl. bat. boxes, 37 ft. ea. 32.50
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15,000 ft. black pipe, 2½ in. water line with all fittings, used one season, per ft..... .15
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Relaying Rails
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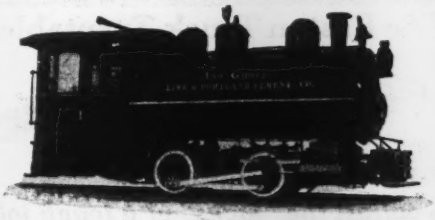

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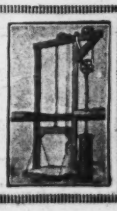

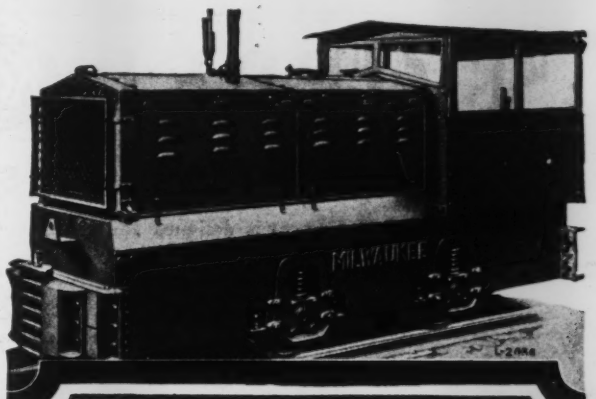

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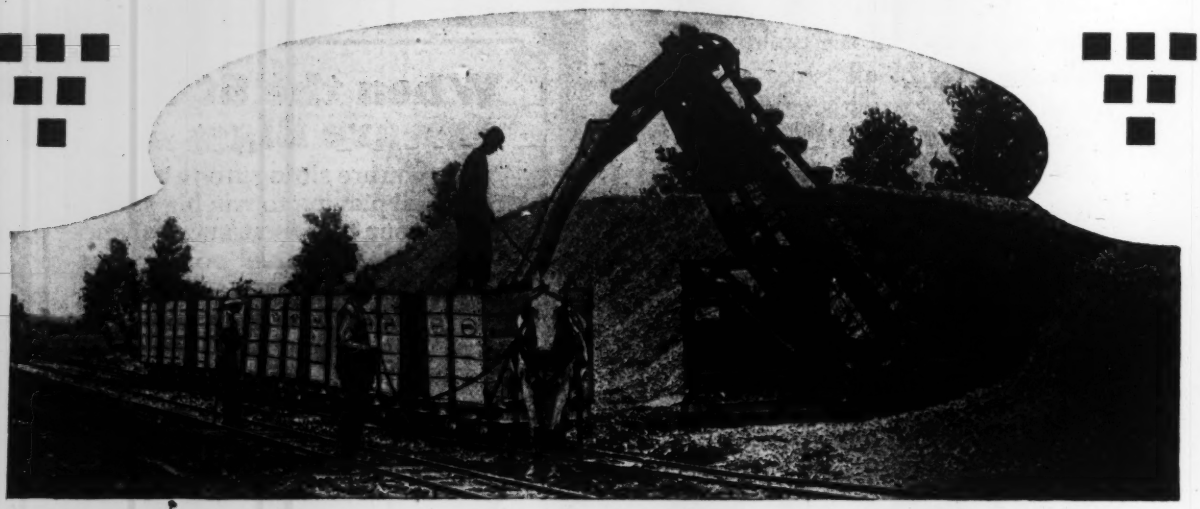

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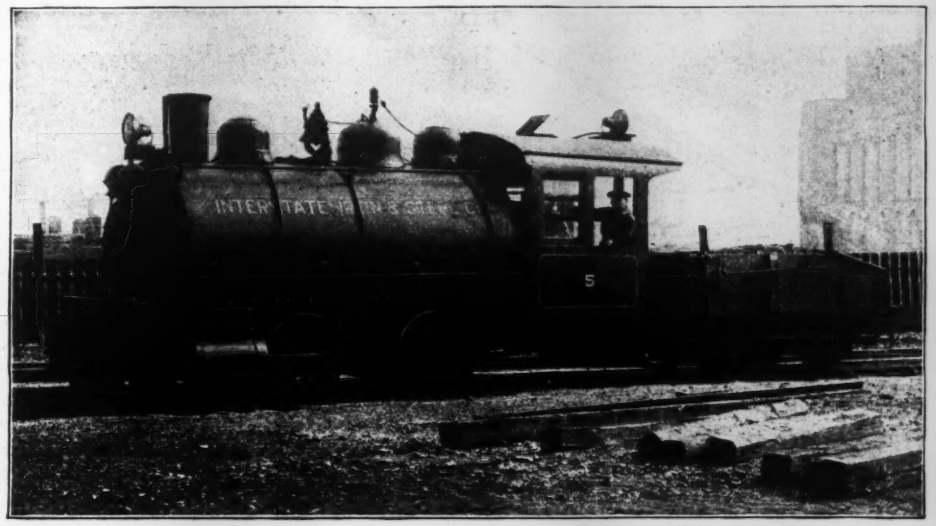
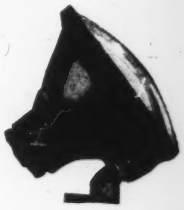


Interstate Iron & Steel Company locomotive equipped with Pyle-O-Lytes, Type 1045 AGB, front and rear, and with Pyle-National Type "K-2" Steam Turbo-Generator.



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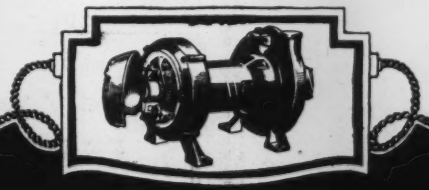

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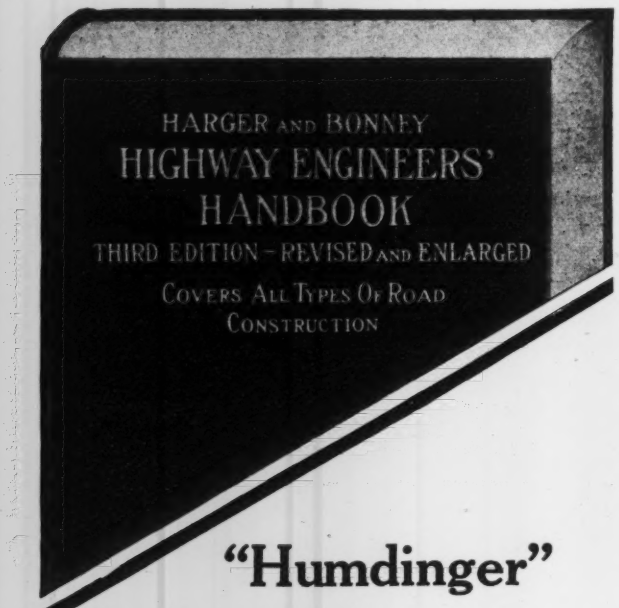

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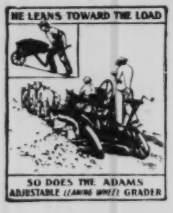

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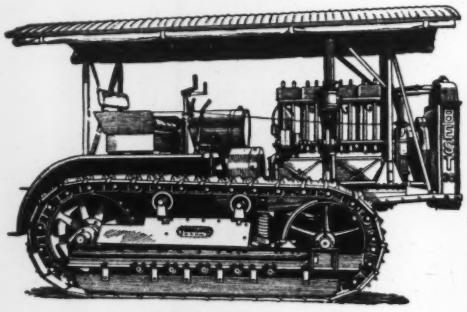

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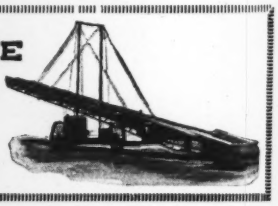

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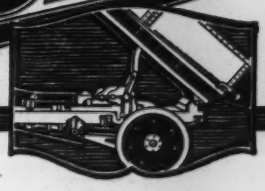

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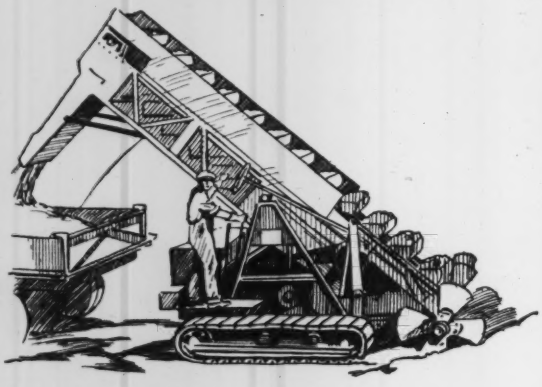

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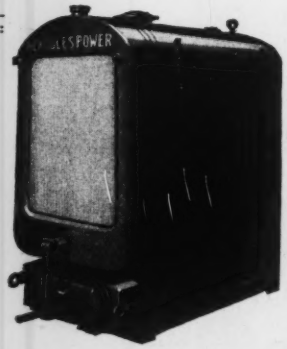

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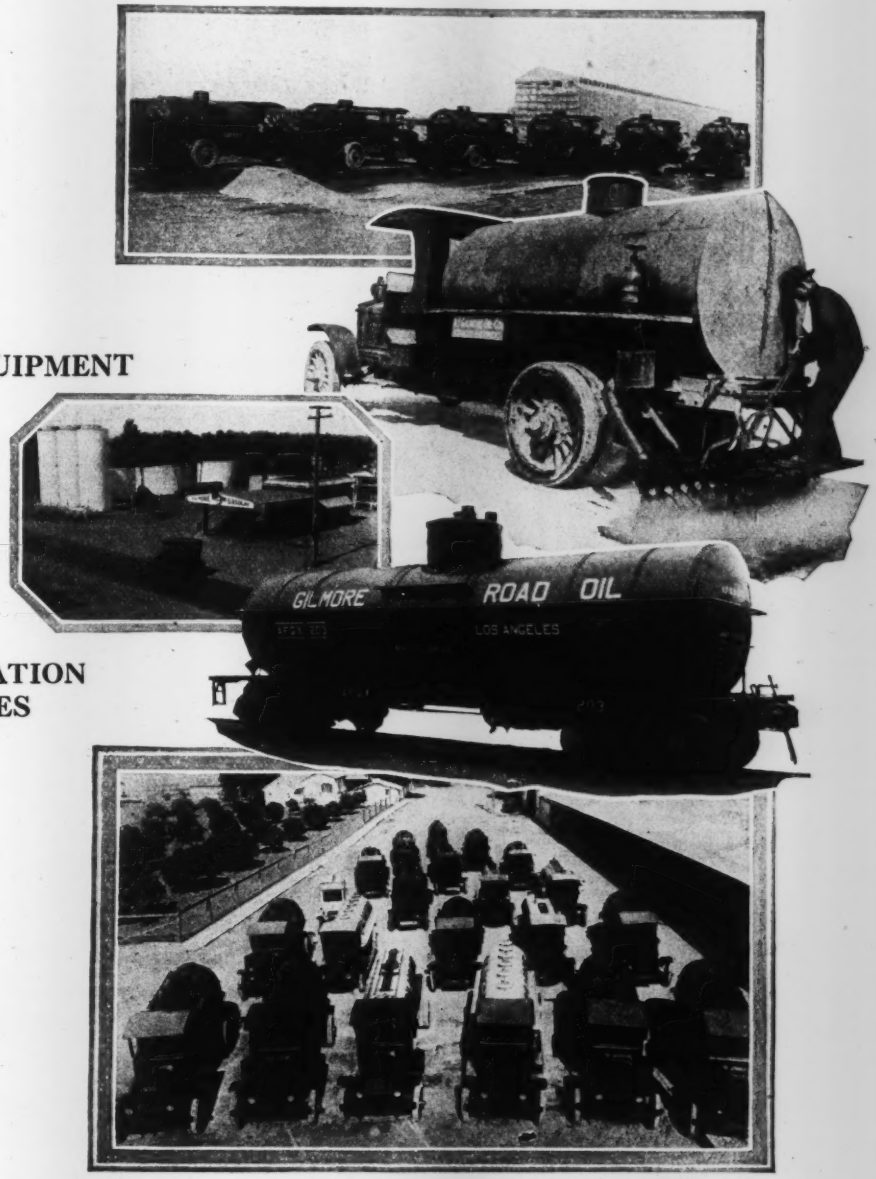

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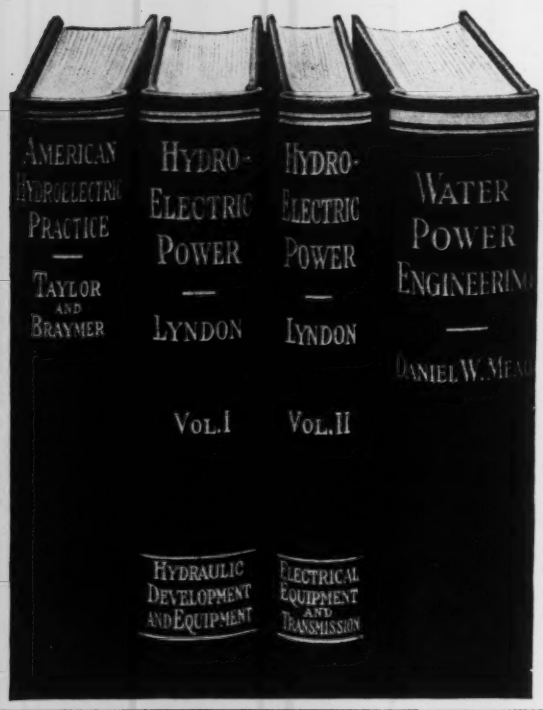

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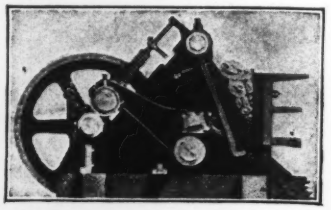

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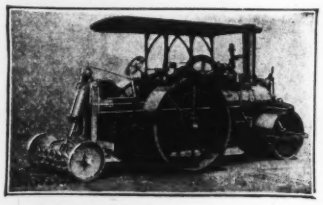

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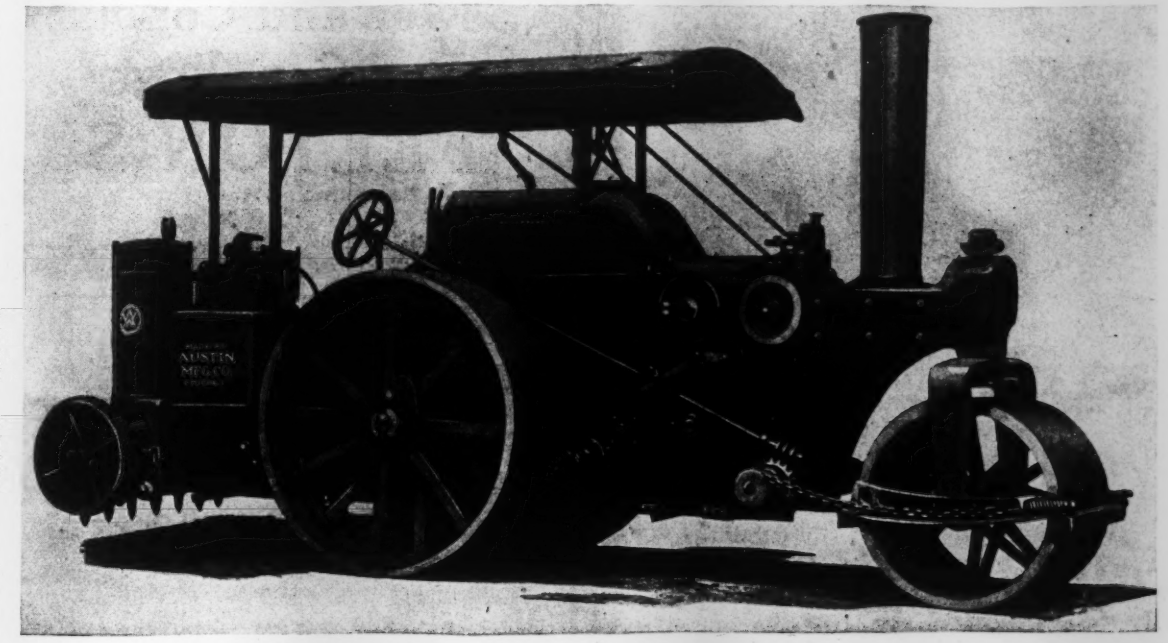

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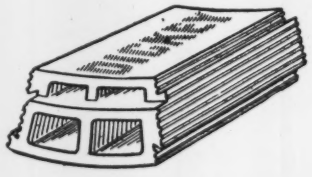

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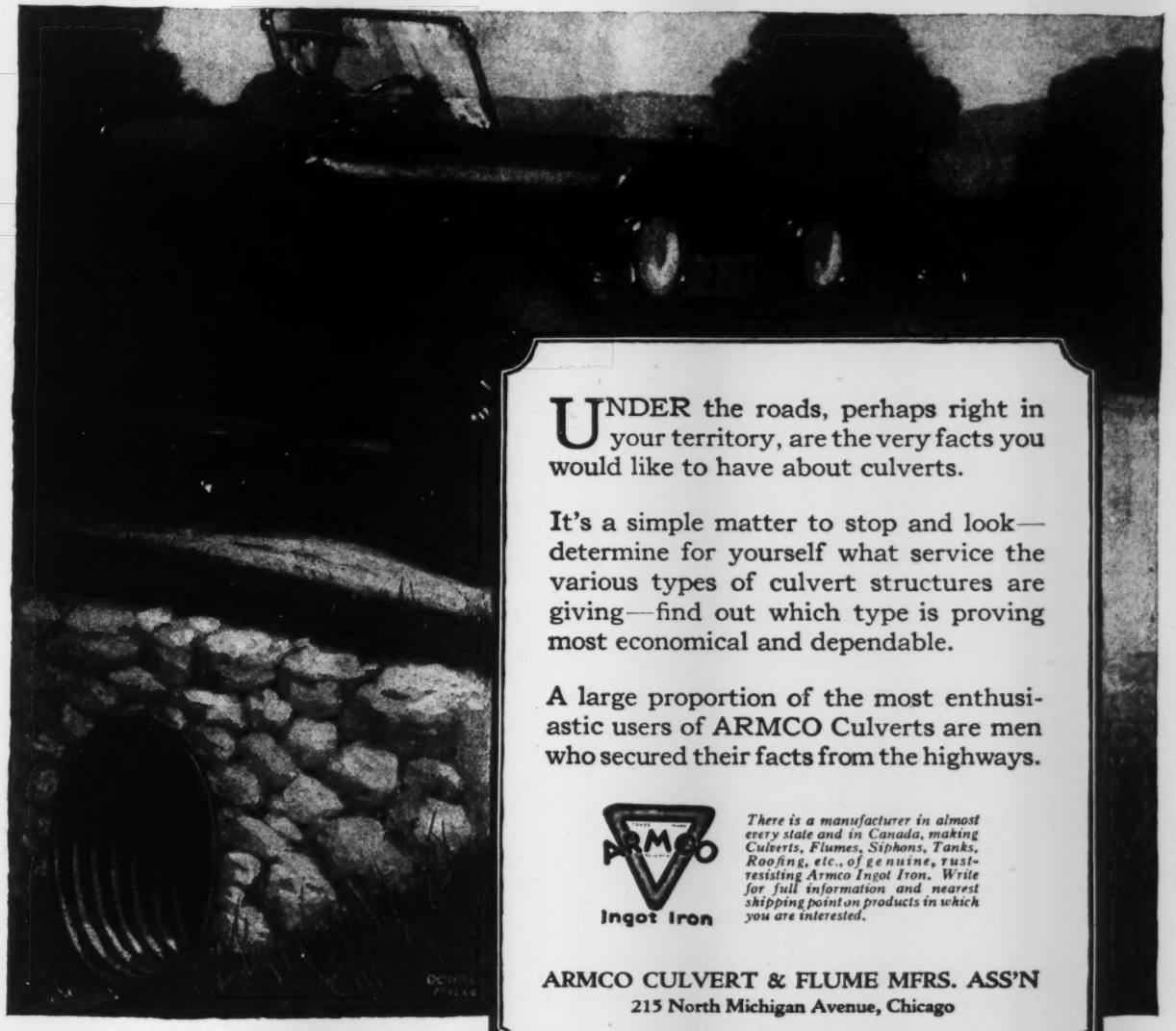

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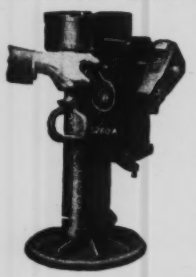

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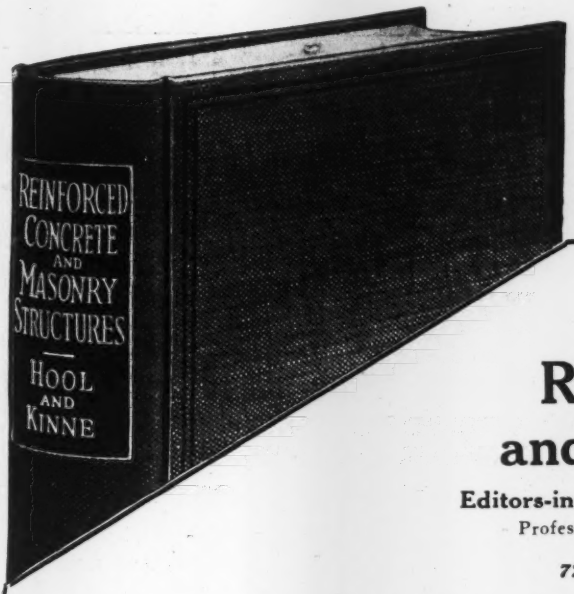

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CONTENTS: I. **Preparation and Placing of Concrete.** Preparation of Concrete. Transporting and Placing of Concrete. II. **Forms for Concrete.** III. **Bending and Placing Concrete Reinforcement.** IV. **Finishing Concrete Surfaces and Waterproofing.** Finishing Concrete Surfaces. Waterproofing. V. **Reinforced Concrete Buildings. General Design.** Basement Walls Concrete Columns. Floors and Roofs—Beam and Slab Construction. Special Types of Reinforced Concrete Roofs. Drainage and Insulation of Concrete Roofs. Roofs Parapet Walls. Miscellaneous Structures. VI. **Retaining Wall Design.** Designing of Gravity Retaining Walls. VII. **Slab and Girder Bridges.** Slab Bridges. Girder Bridges. VIII. **Arches.** General Data. Analysis of Arches. Multiple Span Arches on Electric Piers. IX. **Hydraulic Structures.** Masonry Dams. The Ellipse of Electricity in Arch Analysis. Abutments and Piers. Details of Reinforced Concrete Arch Bridges. Construction of Masonry Arches. Reservoirs. X. **Chimneys.** Draft and Size of Chimneys. General Consideration in Chimney Design. Culverts. Conduits and Sewers. Large Brick Chimneys. Reinforced Chimneys. XI. **Concrete Detailing.** XII. **Estimating Concrete Costs.**

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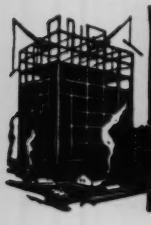

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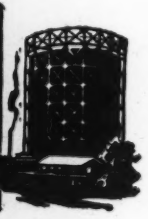

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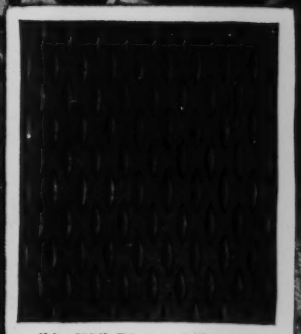

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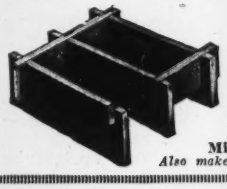

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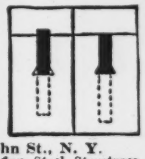

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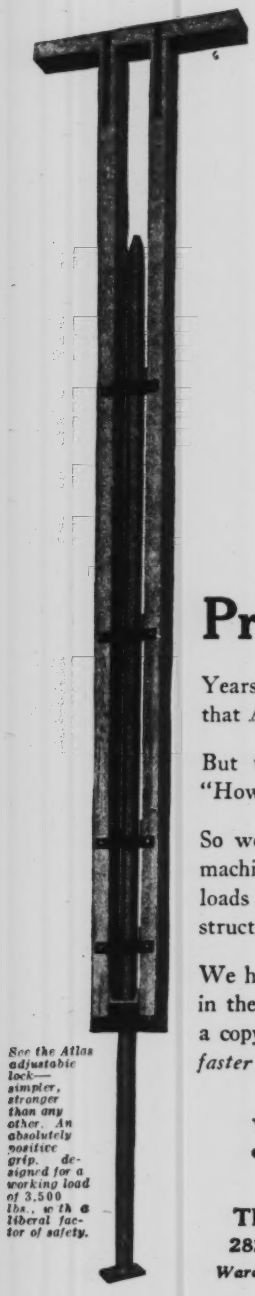

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Proved by Test!

Years of practical use long ago proved that Atlas Shores carry the load safely.

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So we put an Atlas Shore in a testing machine, running the test way beyond loads possible to secure in actual construction work.

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A clamp for all jobs

Universal Form Clamps can be applied economically on all concrete work, reducing the cost of tying forms fully 50%. They assure accurate forms, and by preventing spreading, save many extra yards of concrete. Universal Clamps can't slip. Easy to place and remove. Use them on wall, column, spandrel and soffit forms. Write for details and quotations.

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Save their cost on the first job

The only clamp made which automatically *locks* the timbers together—not requiring a load on the upright to keep the clamps on. Foolproof and simple.

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Gen'l Mgr. Bldg. Dept.

JAS-MJ
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Second Order 600 Rooshors
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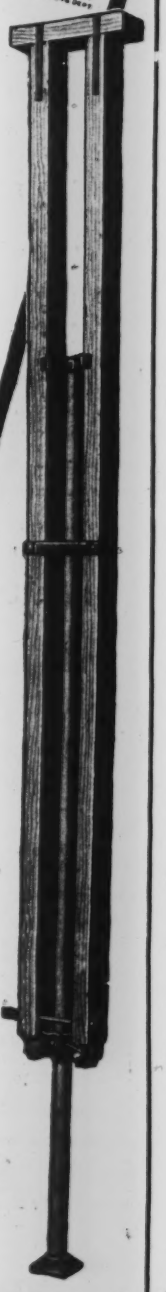

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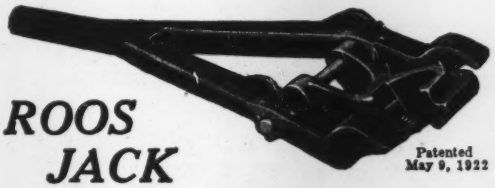
Patented
Aug. 22, 1916
Feb. 15, 1921
May 9, 1922



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CEMENT GUN WORK

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for waterproofing concrete

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Write for literature and address of sales engineer in your territory

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What's YOUR daily yardage?

That's easy! It's 90 to 100 cu. yds. of mixed concrete per 10 hr. day when you use this

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Established 1885

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Best for Any Foundation
High Safety Factor — Low First Cost
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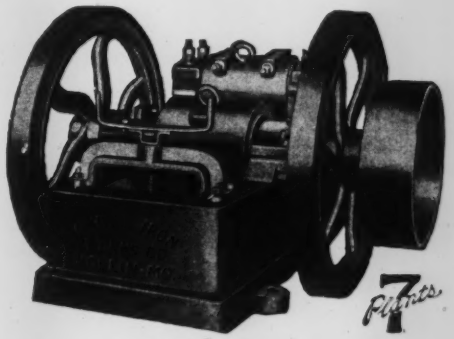

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This "United" Blake type crusher both serves you well and saves you money. It saves you on first cost and upkeep and the day after day service it renders increases the contractor's profits.

The "United" Crusher is strong, compact, and solidly put together. Heavy bed, heavy balance wheels, and substantial design throughout give it plenty of stamina. The wearing parts are of a special alloy that approximates manganese steel yet at only a third of its cost. Size of crushed product can be regulated while machine is in operation. Well protected against tramp iron.

It is concentrating on one type of crusher that makes the low price of the "United" possible. This crusher can be had unmounted, mounted on skids, or mounted on a truck with elevator.

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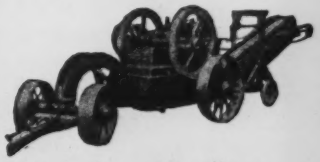

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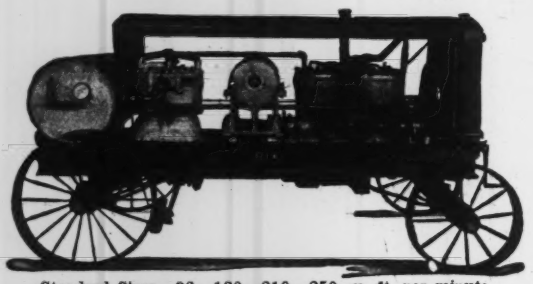

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Standard Sizes—96, 160, 210, 250 cu. ft. per minute.
Engine—4 cyl. heavy duty, tractor type.
Direct connected through Twin Disc clutch.
Positive pressure oiling system.
Well balanced—vibration minimized.
Mounted on heavy duty steel wheels or skids.
Can be mounted on any chassis.

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Rix Compressed Air and Drill Co.

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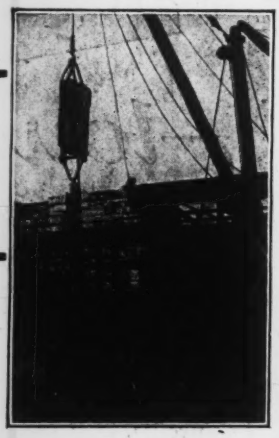

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THE present cost of steel sheeting prohibits leaving it in the ground after it has served its use for cofferdams, etc.

UNION Pile Hammers

first *Drive* steel sheeting without injury and then *Pull* it so you can use it for the next job.

Photograph shows a typical instance. All you have to do, to pull with a Union, is to insert a one-way valve. Steam or air is used with no change whatsoever.

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Specialists in
Pneumatic, Steel Cylinder and Concrete Pile Foundations
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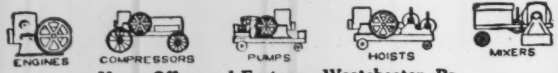
Manufacturers



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DEEP WELL AND CENTRIFUGAL PUMPS

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Uncased Cast-in-Place Cylindrical Concrete Piles
Cast-in-Place Cylindrical Concrete Piles With Permanent Casing Left in Ground
Pedestal Piles
Open-ended Steel Pipe Piles
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Complete information on request

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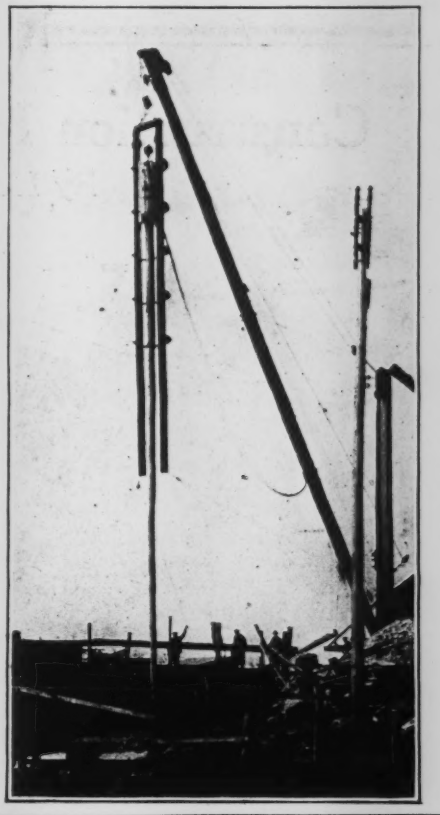
McKiernan-Terry 9-B
driving 80 ft. timber piles
at Keyport, N. J.



This photo shows the next to the heaviest pile hammer we manufacture, at work for the Bentley-Morrison Corporation. It is putting down timber piles ranging in length from 60 to 80 ft., suspended from a 76 ft. boom, guided by 40 ft. steel hanging leads.

Send for Bulletin 31

Whether you want a big hammer to handle work like this (or heavy concrete piles, etc.) or whether you want a "little fellow" to cut labor costs on light sheeting work—remember we make a line of double-acting hammers to meet every requirement. No need to ask *experienced* contractors regarding the McKiernan-Terry line!

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Rock Drills Pile Hammers Lifting Jacks
Mining and Quarrying Machinery
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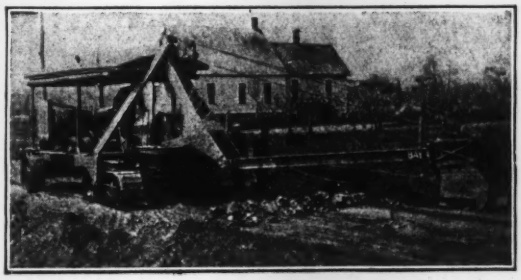
Works at Dover, N. J.

Agencies in the following Cities: Boston, Chicago, Pittsburgh, Cleveland, Detroit, St. Paul, San Francisco, Columbus, O., New Orleans, Philadelphia, Portland, Oregon. *Foreign Representatives:* British Steel Piling Co., London, England

Convertible Bay City Model 16-B For Your Next Grading Job



Excavating hard macadamized stone road at rate of 500 cu. yds. per day.

Better Work at Lower Cost.

The Bay City cuts a swath 34 ft. wide. All steel. Alemite Lubricated. Climax Power.

We guarantee that on shallow road or pavement grade excavation, stripping, etc., the Bay City with ⅝-yd. Skimmer Scoop will handle more material than any other type of shovel equipment of same bucket capacity. Bay City operating cost will be less than steam equipment and it will cut a smoother grade and a wider swath.

Operates Skimmer—Clamshell—Ditcher—Shovel

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New York Office, 302 Broadway

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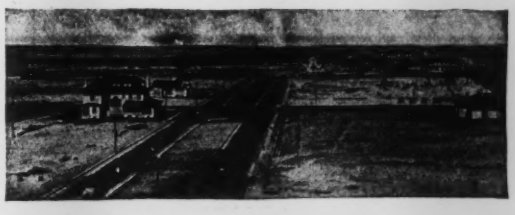

Filling, Land Reclamation, Canals and Port Works

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We are equipped to execute all kinds of dredging, reclamation and port works anywhere in the United States.

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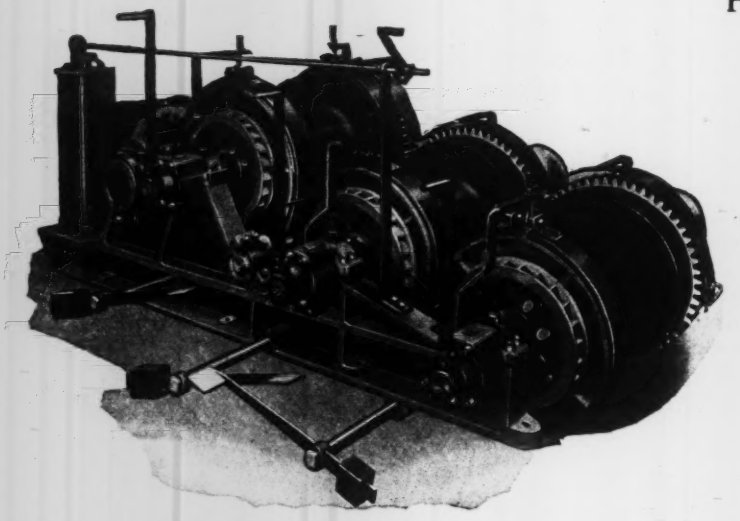
MUNDY
ESTABLISHED 1869

Construction Held Up!

By Heated Friction on Hoist

Has This Ever Happened to You?



Undue heating of frictions and brakes is now eliminated by use of *Asbestall* non-burn frictions and *Asbestolin* lined brakes as built on Mundy hoists.

Asbestall frictions will not char or burn and are unaffected by moisture and oil. These blocks will wear many times longer than wood, leather and other materials.

Brakes lined with Asbestolin, composed of woven metallic asbestos, are mounted on flange end of drum, as shown. This gives more radiating service and prevents the brakes from heating.

May we send our new No. 17 Catalog?

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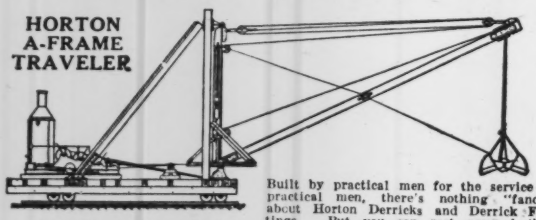
New York Sales and Export Office: 30 Church Street.

HORTON DERRICKS

HORTON A-FRAME TRAVELER



Send for catalog covering Horton Derricks, Winches and Cableways.

Built by practical men for the service of practical men, there's nothing "fancy" about Horton Derricks and Derrick Fittings. But you can rest assured that every part of every Horton Derrick is fully equal to doing its jobs in the most efficient and economical way.

JOHN T. HORTON CO., INC., 242 Bradhurst Avenue New York City

Manufacturers of Derricks, Cableways, Winches

Small in Size, but a Big Money-Maker if you need a machine to move 100 to 300 cu. yd. per day.

Here is just the type of power drag scraper outfit—compact, inexpensive, easily moved from place to place—that owners of small gravel pits, have been looking for. Write for folder.

SAUERMAN BROS.
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MORETRENCH CONVEYING EXCAVATORS

Dig, backfill, lay pipe, pull sheeting, load trucks.

The only way on a wet trench and *the cheapest way* on a dry trench.

MORETRENCH HAMMER CRANES

The easiest way to use the big hammers that have the "sock" to drive sheeting.

ONE MACHINE AND ONE CREW

MOORE TRENCH MACHINE CO.
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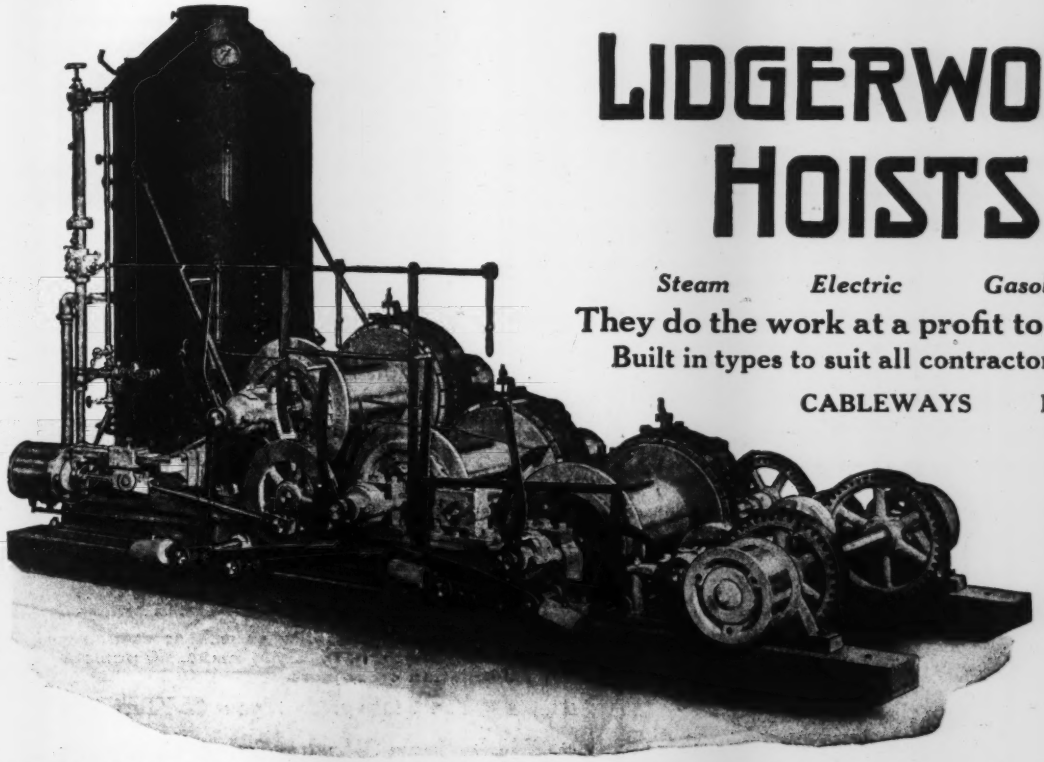

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Steam *Electric* *Gasolene*

They do the work at a profit to the user

Built in types to suit all contractors' uses

CABLEWAYS **DERRICKS**

Catalogs upon Request

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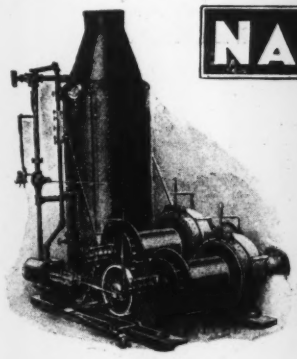

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Hoists
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"HERCULES" WIRE ROPE

Hercules (Red Strand) Wire Rope is wear resisting at every point. Its unusual combination of strength, toughness and elasticity make it economical as well as dependable.

Established 1857

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For A.C.!

Up goes the load on the first notch!

Here at last are single and double-drum hoists that operate efficiently on A.C.! *Made specifically for contracting work.* They start the load on the first lever movement and speed is controlled at will. There are no other hoists "just as good" as Fergusons.

Write for details and learn why.

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Clinton and Twelfth Streets,
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Steam and Electric Building Hoists

This standard double drum Thomas Hoist is the type most universally used for general hoisting. It is a hoist easy to operate and control. Being equipped with the Thomas band frictions, it operates without a thrust bearing. There is no possibility of friction becoming hot. Friction Driven Boom Swinger can be added at any time.

The Thomas automatic motor brake which positively prevents motor from backing down in case of interruption of current, is standard equipment on these hoists.

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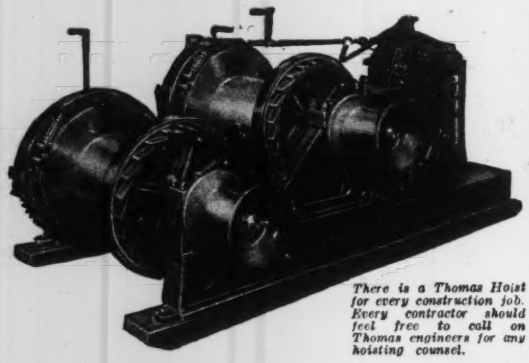
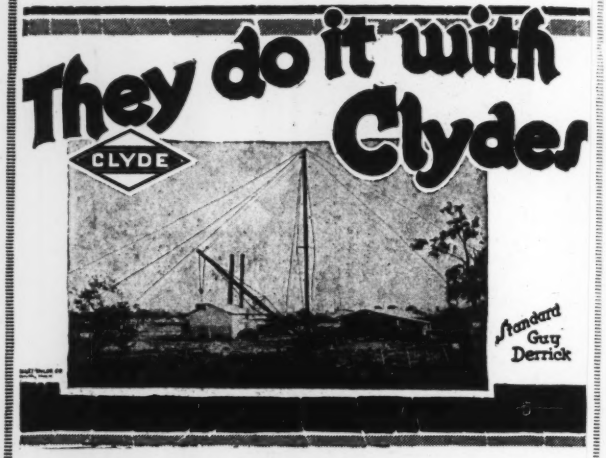
24 South Hoyne Ave., Chicago



There is a Thomas Hoist for every construction job. Every contractor should feel free to call on Thomas engineers for any hoisting counsel.

They do it with Clydes



"We have never regretted for one minute the purchase of this equipment and will say in our experience with this derrick, we could not afford to be without it for double the initial expense. The saving on our material relative to unloading and handling is far greater than we expected.

INDIANA ASPHALT PAVING CO., W. C. Richter, Sec."

You will find durability as well as economy in every machine of Clyde make. Complete information on request.

You'll take pride in your CLYDE!

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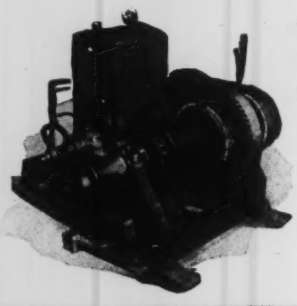
Stroudsburg Reversible Gasoline Hoists Available from Stock



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"O & S" HOISTS

Are DURABLE and DEPENDABLE

Electric Gasoline or Steam

Manufactured by
Orr & Sembower, Inc.
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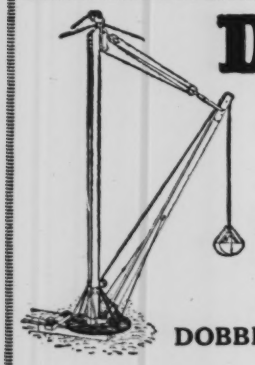

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DOBBIE Foundry & Machine Co.
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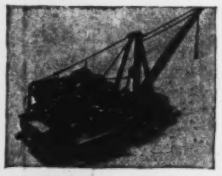

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for every requirement
STEAM—ELECTRIC
GASOLINE

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Terry Derrick Fittings for general construction work

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Locomotive—Crawler—Traction

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Sales Offices in All Principal Cities

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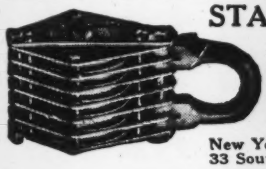

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Are Standard
For any lift or difficult working condition they are safest, strongest and most durable.
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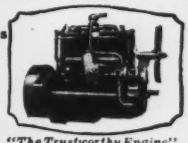
Trustworthy **POWER**
Be Sure Your Machines are Equipped with
CLIMAX



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CLIMAX ENGINEERING CO., 3 W. 18th Ave., CLINTON, IOWA.

CRANES All Types

WHITING CORPORATION
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Foundry Equipment

"TOLEDO CRANES"
Fulfill Every Requirement
Save Time, Labor and Space
THE TOLEDO CRANE CO.
BUCYRUS, OHIO

TRAVELING CRANES
Hand power—Electric
ANY CAPACITY, ANY SPAN
New Jersey Foundry & Machine Co.
90 West Street, New York

ELECTRIC AND HAND TRAVELING CRANES
NORTHERN CRANES
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NORTHERN ENGINEERING WORKS.
DETROIT, MICH. U.S.A.

"Temperature Always Under Control"

Think of the cooling an engine needs that operates the powerful machines used to excavate drainage and irrigation canals, clean waterways and build levees and railroad embankments! This work certainly puts a cooling job on the Radiator.

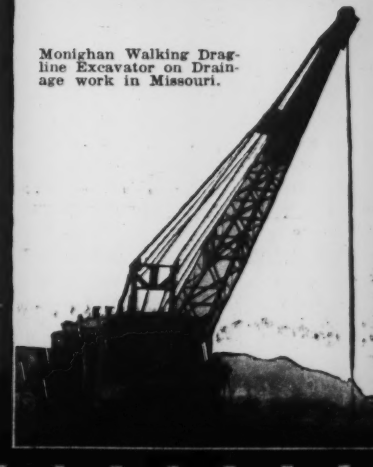
That is why Modine Radiators are used as standard equipment on the engines operating Monighan Walking Dragline Excavators. The Monighan Machine Company says "Temperature is Always Under Control."

Modine Radiators have greater cooling capacity per pound of core material than any other construction.

Write for the Modine Booklet.

MODINE MANUFACTURING COMPANY,
Racine, Wisconsin

MODINE
SPIREX and TUBULAR RADIATORS



Monighan Walking Dragline Excavator on Drainage work in Missouri.

TAYLOR-WHARTON IRON & STEEL CO.

TIOGA STEEL & IRON CO. | Wm WHARTON Jr. & CO. Inc. | PHILADELPHIA ROLL & MACH'E

Allow us to send you this book. You will find it interesting and helpful.

Putting the Right Steel On the Job

"Profits are based on uninterrupted operations"

There are many kinds of steel; some are tough, some glass hard, some resistant to pressure, some to shock, some to abrasion. Efficiency comes in selecting the particular steel suited to the work which it shall be called upon to perform. A machine is not apt to break down if the parts subject to the greatest wear are made of the proper steel; the proper steel is available and economy demands its use. Scarcely a day passes that some of our engineers do not make specific applications which prove to be money-saving.

The booklet, "Putting the Right Steel on the Job," sets forth a number of these applications. Send for it.

Taylor-Wharton Iron & Steel Co.
High Bridge, N. J.

Sole owner of the Hibbard-Howe patents covering basic processes for the electric manufacture of manganese steel.

Taylor-Wharton Iron & Steel Co.	Wm. Wharton Jr. & Co.	Tioga Steel & Iron Co.	Phila. Roll & Machine Co.
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Manganese Steel Wearing Parts	Special Trackwork Cylinders for Gases	Hammered and Pressed Forgings	Rolls and Rolling Mill Machinery

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CLAMSHELLS
ORANGE PEELS
Quick Acting
Easy Operating
Few Parts
Long Service
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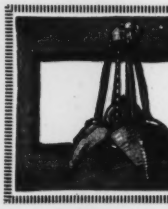
Jersey City, U. S. A.

INDUSTRIAL CRANES
17 Locomotive Types-5 to 200 Tons
INDUSTRIAL WORKS
BAY CITY MICHIGAN



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Orange Peel, Clam Shell, Electric Motor, and Drag Scraper Buckets for all excavating, dredging, and rehandling purposes. Ask for Catalog 43, or consult our engineers gratis.
The Hayward Co., 48-50 Church St., N. Y.
BUCKETS

OWEN Clam Shell BUCKETS INSURE A BIGGER DAY'S WORK

OWEN BUCKETS
Famous for digging power. Send for literature describing complete line of Owen Buckets.
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CRANES—BUCKETS
Convertable Gear Driven Shovels
All Types—All Sizes
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Trident Water Meters

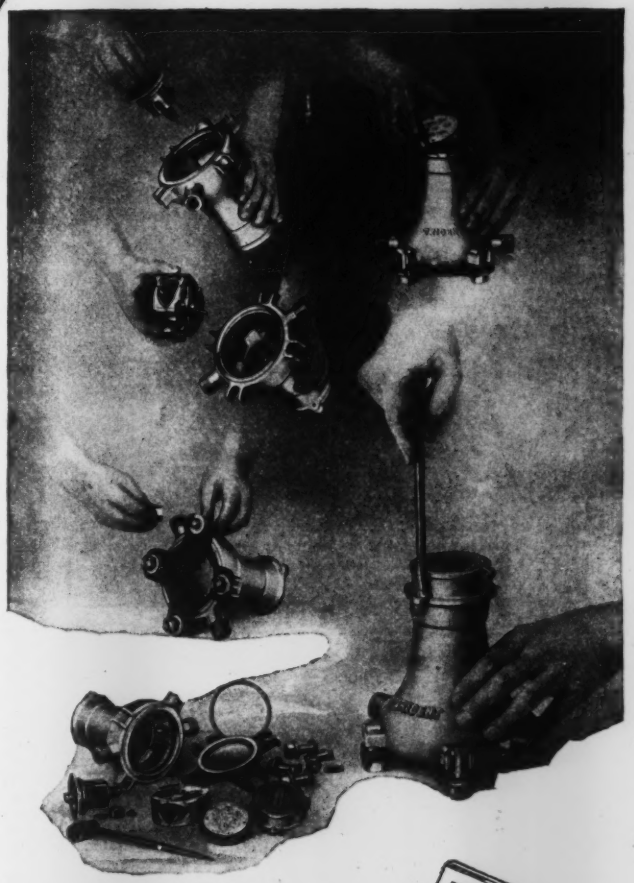
Interchangeable Unit Construction

"Each essential member of the complete Trident assembly is a self-contained unit and this is true regardless of the type. In beginning the assembly of the Trident Frost-proof Meter, the first member to be inserted in the main casing is the Trident Oil-Enclosed Gear Train. Next the piston with the patent Trident thrust roller bearing is inserted in the disk chamber and the two halves of this chamber snapped together by hand. Then the measuring chamber is placed in the main casing.

The breakable bottom is then put in place, the nuts of the four T-head bolts holding it turned on by hand and then tightened with the special Trident socket wrench. The assembly is then completed from the other end by placing the improved interlocking Trident register at the top and fastening it in place by means of the register box and sealing screws. These operations are carried out with a specially designed tool provided with Trident water meters.

This great ease of assembly is due, first, to the fact that there is only one correct way of putting Trident parts together; second, because all are made to such high standards of precision that every Trident part can be used with any other part without the necessity of hand fitting.

The complete meter has been reduced to three main units, making it easy for an inexperienced person to take the meter apart and put it together again, either with the old parts or with replacement parts. Maintenance charges consist largely of labor costs and these have been reduced to a minimum in the Trident."



Ease and Simplicity of Trident Assembly
The Assembly Is Progressive and Parts Can Go Together in But One Way. Each Part Is a Unit and Interchangeable.

Send for the New Trident Book

The text matter in this advertisement is an excerpt from page 15 of our new 96-page booklet illustrating and describing all types and sizes of Neptune Trident Meters. A copy with pleasure upon request.

Neptune Meter Company

Pioneers in Meter Progress

50 East 42nd Street, New York City

NEPTUNE METER CO., LTD., 1197 King St., West, Toronto, Ont.

Boston Chicago San Francisco Atlanta Los Angeles Seattle Portland St. Louis, Mo.

Frost-protected or frost-*proof*?

In considering water meters it pays to know the difference

'Most any modern water-meter is frost-protected. It has some part which breaks under extreme pressure and thereby saves the main casing and mechanism from serious damage.

But breakable parts mean expense for renewals and the inconvenience or even loss of having the meter temporarily out of service.

That's where the Lambert Frost-Proof Meter is different. Slitted brass collars used in clamping the top and bottom casings together, open under excessive pressure and allow the casing to part to any necessary extent. After freezing, the collars can be reclosed and the meter bolted anew.

No new parts are necessary, no service interruption is caused and the job can be done in a few minutes. That's real meter economy!

Write now for the Lambert Booklet N.R., chock full of sensible meter ideas. Just a postal brings your copy.

LAMBERT
F. P.
DISC METER

Thomson Meter Co.
Factory and Main Offices
98 Bridge Street, Brooklyn, N. Y.

NASH
TYPE K
WATER METERS

All bronze disc model. Extra large slow moving disc. Real frost protection. Easy to take apart—no "jamming." Substantial enclosed intermediate.

For every service where a disc meter is specified, Type K will be found up to the most exacting requirements.

Send for descriptive circular No. 200

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Established 1870
299 Broadway, New York
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"WATCH DOG"

WATER METERS

Accurate
Durable
Efficient

GAMON METER COMPANY
Main Office and Works: Newark, New Jersey
Chicago Office: 360 No. Michigan Avenue

Judge for Yourself
The Quality of Hersey Water Meters

Here are the results of the last eight tests made on Hersey Disc Type Water Meters by the water commissioner of a medium sized eastern city during March 1924.

These meters had been protested by property owners and were taken from their settings and placed directly on a Mueller Meter Tester without examination.

METER No. 714,240 DATE SET, JUNE 19, 1919
1 cubic foot 5/8 inch stream weighed 63.00 pounds or 99.2% accurate
1 cubic foot 1/16 inch stream weighed 63.00 pounds or 99.2% accurate

METER No. 671,038 DATE SET, JANUARY 30, 1921
1 cubic foot 5/8 inch stream weighed 62.75 pounds or 99.6% accurate
1 cubic foot 1/16 inch stream weighed 62.50 pounds or 100% accurate

METER No. 693,007 DATE SET, NOVEMBER 27, 1916
1 cubic foot 5/8 inch stream weighed 62.50 pounds or 100% accurate
1 cubic foot 1/16 inch stream weighed 62.50 pounds or 100% accurate

METER No. 763,210 DATE SET, JUNE 2, 1916
1 cubic foot 5/8 inch stream weighed 62.50 pounds or 100% accurate
1 cubic foot 1/16 inch stream weighed 62.50 pounds or 100% accurate

METER No. 714,343 DATE SET, AUGUST 10, 1917
1 cubic foot 5/8 inch stream weighed 62.00 pounds or 100.8% accurate
1 cubic foot 1/16 inch stream weighed 62.00 pounds or 100.8% accurate

METER No. 389,704 DATE SET, DECEMBER 28, 1918
1 cubic foot 5/8 inch stream weighed 63.00 pounds or 99.2% accurate
1 cubic foot 1/16 inch stream weighed 63.00 pounds or 99.2% accurate

METER No. 347,247 DATE SET, SEPTEMBER 17, 1917
1 cubic foot 5/8 inch stream weighed 62.00 pounds or 100.8% accurate
1 cubic foot 1/16 inch stream weighed 62.00 pounds or 100.8% accurate

METER No. 880,602 DATE SET, SEPTEMBER 15, 1921
1 cubic foot 5/8 inch stream weighed 62.50 pounds or 100% accurate
1 cubic foot 1/16 inch stream weighed 62.50 pounds or 100% accurate

These meters have been in service from 3 to 8 years under water pressure ranging from 85 to 95 pounds per square inch and show no falling off of registration accuracy.

Tests such as these prove the superiority of the Hersey Water Meter as an automatic revenue computer. Have you received our latest catalog?

6703

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WATER METERS

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Manufacturing Company

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COLUMBUS, OHIO ..... 211 Schultz Bldg.
LOS ANGELES, CAL. ..... 218 East Third Street
CHICAGO, ILL. ..... 10 So. La Salle Street
ATLANTA, GA. ..... 610 Citizens & Southern Bank Bldg.
SAN FRANCISCO, CAL. ..... 742 Market Street
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WATER METERS

ARCTIC
Frost Bottom

KEYSTONE
COMPOUND

EUREKA
Current

KEYSTONE
All-Bronze

PITTSBURGH METER COMPANY
7800 Susquehanna Street, Pittsburgh, Pa.

NEW YORK—50 Church St.
CHICAGO—5 So. Wabash Ave.
KANSAS CITY—Mutual Bldg.
COLUMBIA—1433 Main St.
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At far below market prices

LARGEST STOCK
IN THE WORLD

BRASS
Valves
BRASS
Pipe Fittings
Steam Pressure, Vacuum
and Compound GAUGES

Our stock is of standard manufacture—the highest grade that is made. Their copper content is eighty to eighty-eight per cent.

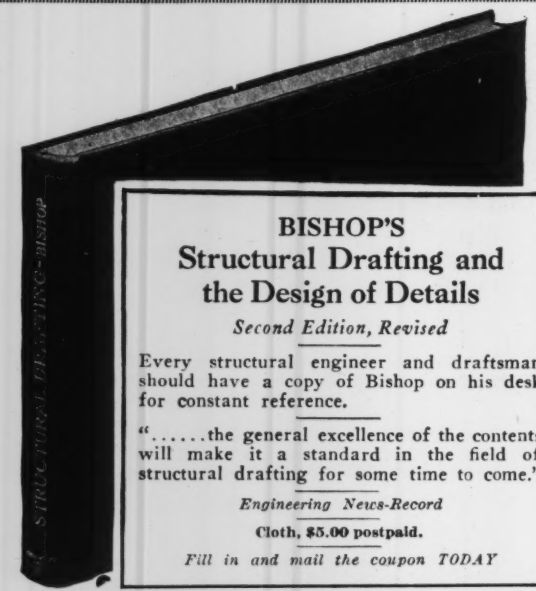
If you are not satisfied with the goods, or you can duplicate any part of the shipment at a lower price, you may return the entire lot—at our expense.

Our large stock on hand makes it possible for immediate deliveries.

Send for our latest revised Catalogue No. 5

JONES McKEE, INC.
170 B'way New York City

Warehouses, Stores: 29-36 Bush Terminal, Brooklyn, N.Y.



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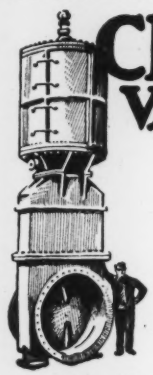

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Sluice Gates and Floor Stands

are backed by over 50 years' experience

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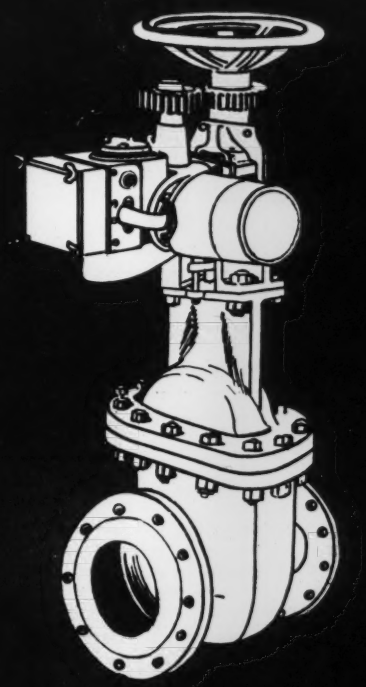
"VENTURI" Registered Trade Mark
For Water, Sewage, Gas, Air, Steam—
in fact everything that flows.
Bulletins on Request.
BUILDERS IRON FOUNDRY, Providence, R. I.

SIMPLEX
Rate of Flow Controller

Simplicity Service Satisfaction

Bulletin 28 Tells the Story

SIMPLEX VALVE & METER CO., 300 Fidelity Bldg., Philadelphia, Pa.



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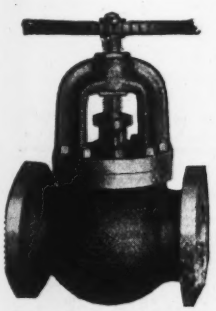

Fig. 162, flanged, Extra Heavy Iron Body Globe Valve, suitable for 250 pounds steam working pressure, and 400 pounds water working pressure.

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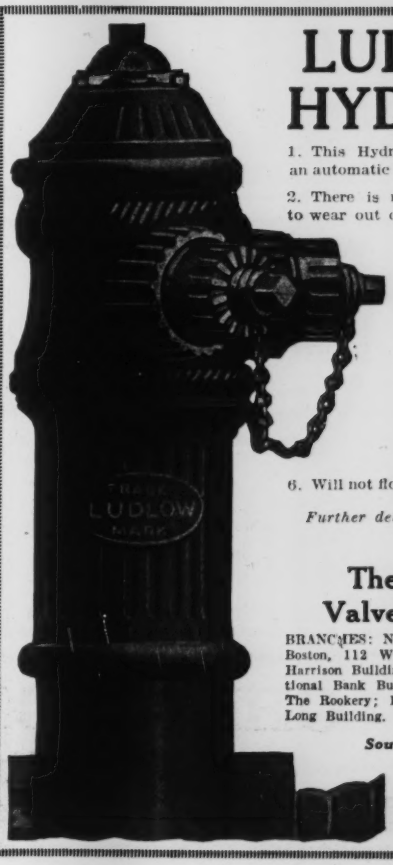
Jenkins Valves
SINCE 1864



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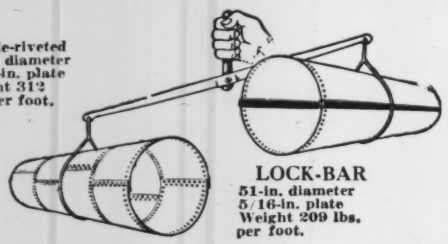

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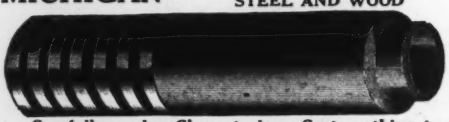

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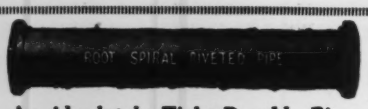

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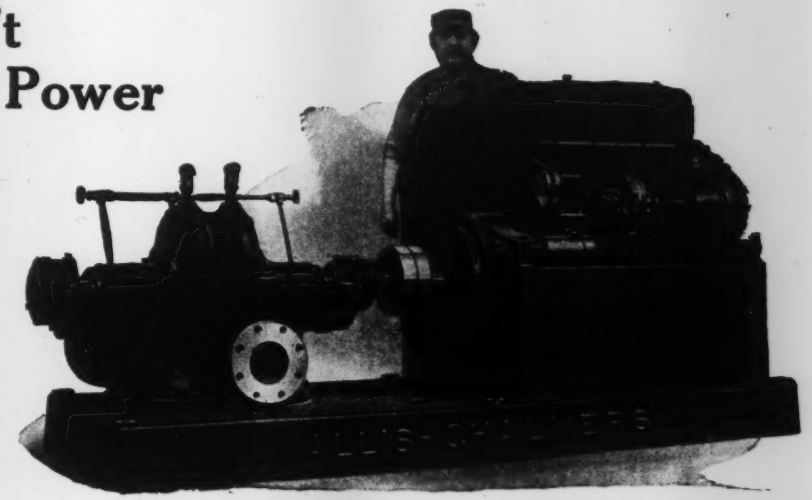

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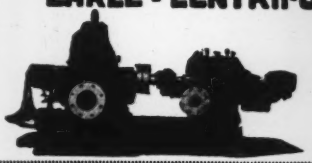

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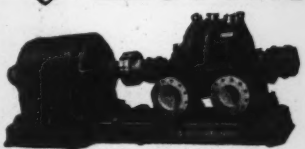

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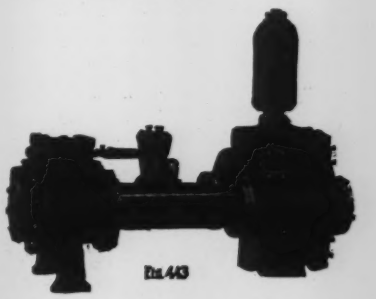

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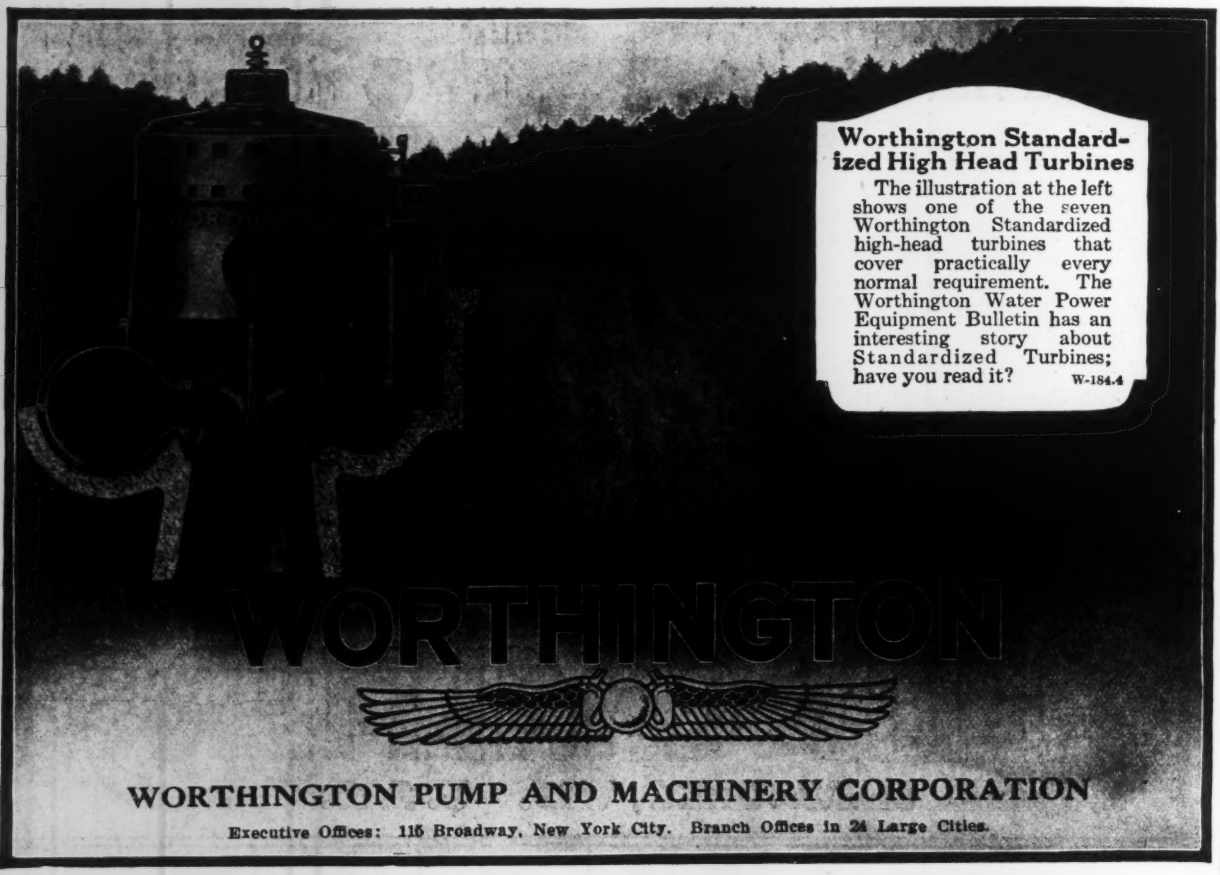

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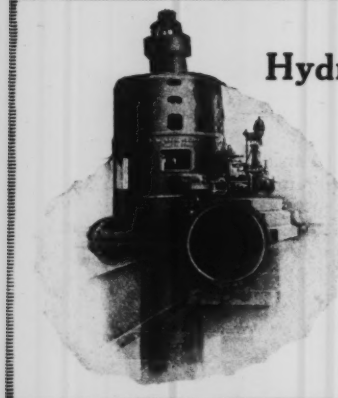

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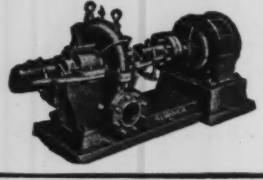

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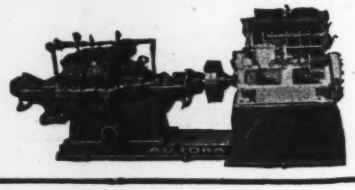

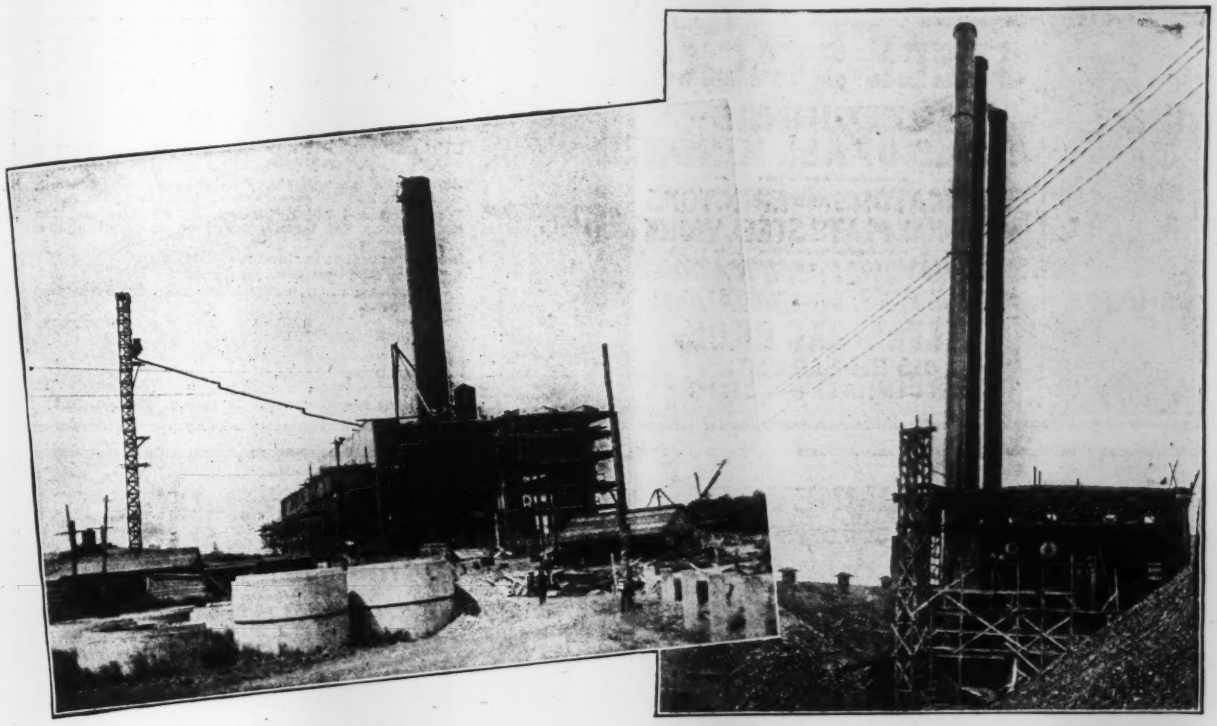

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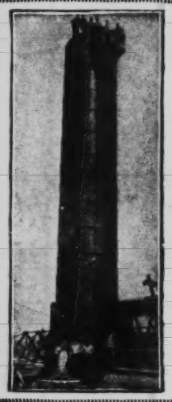

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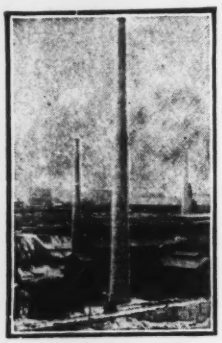

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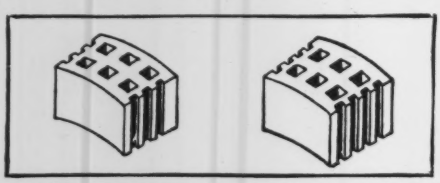

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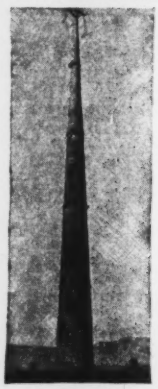

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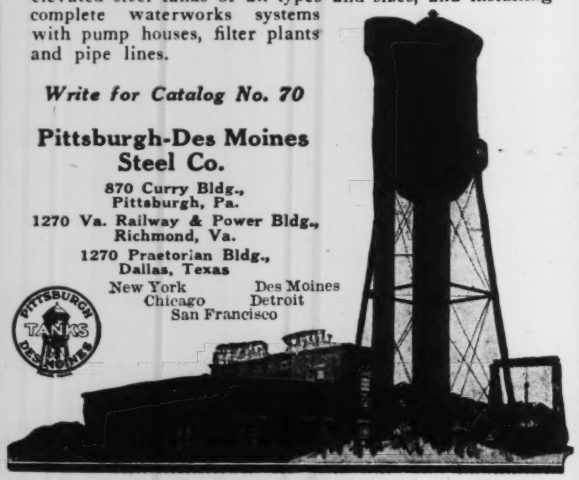

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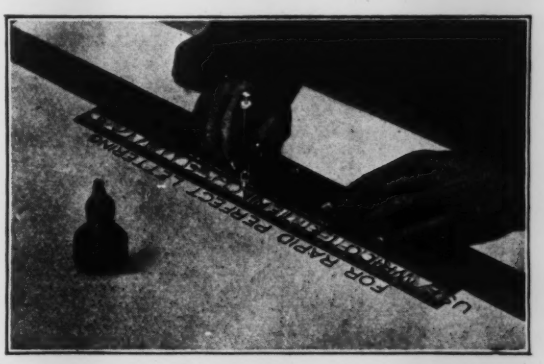

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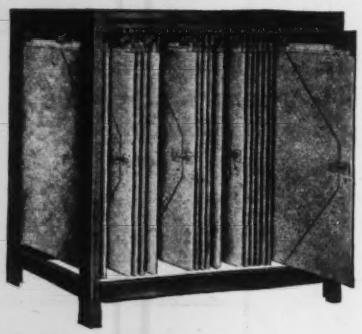

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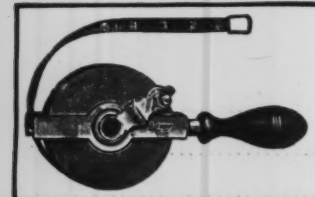

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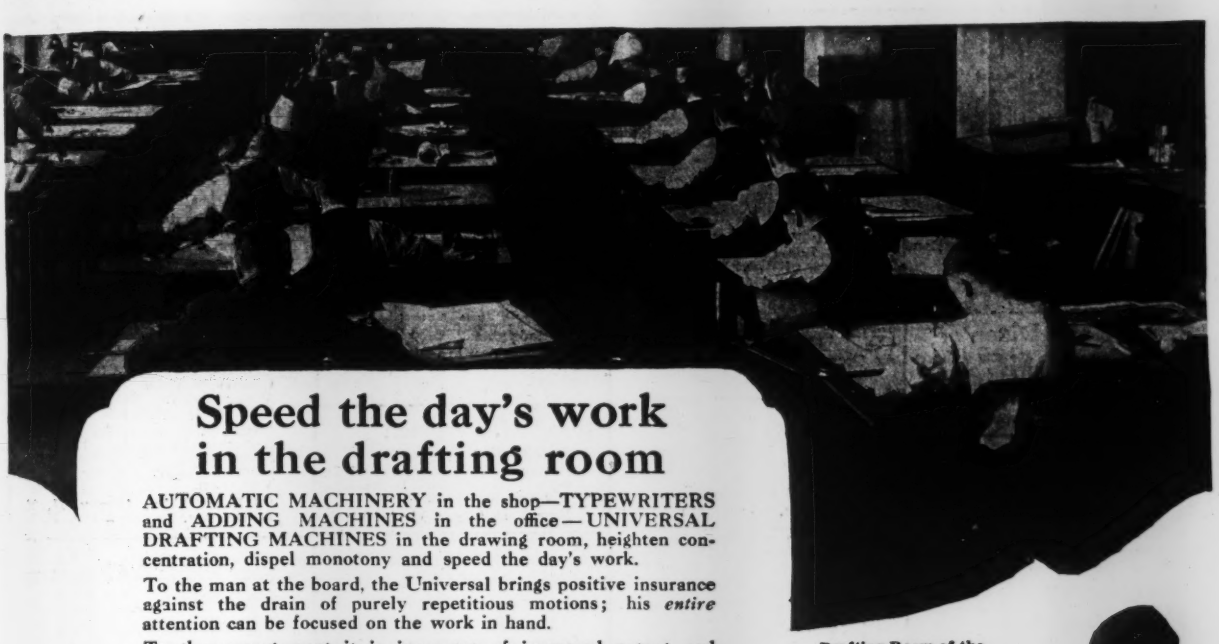

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Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.

Cofferdams, Steel
Bethlehem Steel Co.

Column Clamps
Concrete Steel Co.
Pyle-Rogers Corp.
Universal Form Clamp Co.

Column Forms
Blaw-Knox Co.
Concrete Steel Co.
Heltzel Steel Form & Ir. Co.

Compressors, Air, Heavy Duty
Allis-Chalmers Mfg. Co.
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.
Rix Compressed Air & Drill Co.
Sullivan Mchy. Co.
Worthington Pump & Mchy. Corp.

Compressors, Air, Portable
Cement-Gun Co.
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Rix Compressed Air & Drill Co.
Schramm, Inc.
Sullivan Mchy. Co.

Concrete Floor Hardener
Anti-Hydro Waterpr'f'g Co.
General Chemical Co.
Truscon Laborat.

Concrete Making Machinery
Ransome Concrete Mchy. Co

Concrete Reinforcement
American Steel & Wire Co.
Berger Mfg. Co.
Bethlehem Steel Co.
Brown Hoisting Mchy. Co.
Carnegie Steel Co.
Concrete Steel Co.
Consolidated Expanded Metal Cos.
Kalman Steel Co.
Keystone Gypsum Fireproofing Co.
Laclede Steel Co.
Mitchell-Tappen Co.
National Steel Fabric Co.
Northwestern Expanded Metal Co.
Rail Steel Products Assn.
Ryerson & Son, Joseph T.
Truscon Steel Co.
U. S. Gypsum Co.

Condensers
Ingersoll-Rand Co.
Worthington Pump & Mchy. Corp.

Contractors
Cement-Gun Construction Co.
Gunite Concrete & Const. Co.
Indiana Gunite Constr. Co.
MacArthur Conc. Pile & Foundation Co.
Spencer, White & Prentis
Stone & Webster, Inc.
Terry & Tench Co., Inc.

Conveyors, Belt
Austin Manuf. Co.
Austin Western Rd. Mch. Co.
Barber-Greene Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Smith Engineering Works
Specialty Engr. Co.

Conveyors, Bucket
Barber-Greene Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Nelson Iron Works, N. P.
Specialty Engr. Co.

Corner Bead Metal
Consolidated Expanded Metal Cos.
Northwestern Expanded Metal Co.
Truscon Steel Co.

Cranes, Crawling Tractor
Industrial Works
Universal Crane Co.

Cranes, Electric
Industrial Works
Universal Crane Co.

Cranes, Locomotive
Bay City Dredge Works
Brown Hoisting Mchy. Co.
Clyde Iron Works Sales Co.
Erie Steam Shovel Co.
Industrial Works
McMyler Interstate Co.
Marion Steam Shovel Co.
Northwest Engr. Co.
Ohio Locomotive Crane Co.
Orton & Steinbrenner Co.
Pawling & Harnischfeger Co.
Universal Crane Co.
Thew Shovel Co.

Cranes, Motor-Truck
Universal Crane Co.

Cranes, Traveling
Brown Hoisting Mchy. Co.
N. J. Foundry & Mach. Co.
Northern Engineering Wks.
Pawling & Harnischfegger Co.
Toledo Crane Co.
Whiting Corporation

Creosoted Blocks, Timber Poles, Cross-Arms Lumber,
Amer. Creosoting Co. (Ky.)
Colonial Creosoting Co.
Eppinger & Russell Co.
Georgia Creosoting Co.
Jennison-Wright Co.
Republic Creosoting Co.
South. Wood Preserv. Co.
Wyckoff Pipe & Creo. Co.

Creosoting
Amer. Creosoting Co. (Ky.)
American Creosote Works
Colonial Creosoting Co.
Eppinger & Russell Co.
Georgia Creosoting Co.
Jennison-Wright Co.
Wyckoff Pipe & Creo. Co.

Creosoting Oils
Protexol Corp.

Crushers and Pulverizers
Allis-Chalmers Mfg. Co.
Austin Manuf. Co.
Austin-Western Rd. Mch. Co.
Brown Hoisting Mchy. Co.
Good Roads Machy. Co.
Smith Engineering Works
United Iron Works, Inc.
Universal Road Mchy. Co.

Culverts, Corrugated
Armco Culvert & Flume Mfrs. Assn.
Austin-Western Rd. Mch. Co.
Hardesty Mfg. Co., The R.
Canton Culvert & Silo Co.

Culverts, Metal
Amer. Sheet & Tin Plate Co.
Armco Culvert & Flume Mfrs. Assn.
Austin-Western Rd. Mch. Co.
Hardesty Mfg. Co., The R.
U.S. Cast Ir. Pipe & Fdy. Co.

Culverts, Nestable & Riveted Corrugated
Armco Culvert & Flume Mfrs. Assn.
Canton Culvert & Silo Co.

Curb Guards, Steel
Godwin Co., Inc., W. S.

Curbs, Steel Protected
Concrete Steel Co.
Truscon Steel Co.

Dams
Ambursen Construction Co.
Ambursen, N. F.

Dealers, Equipment
See Searchlight Section

Derricks and Derrick Fittings
Amer. Terry Derrick Co.
Clyde Iron Works Sales Co.
Dobbie Fdry. & Mach. Co.
Haiss Mfg. Co., Geo.
Hayward Co.
Horton Co., John T.
Insley Mfg. Co.
Lidgerwood Mfg. Co.
McMyler Interstate Co.
Mundy Hoist. Eng. Co., J. S.

Distributors, Pressure Oil
(See Road Oilers, Pressure)

Ditching Machinery
(See Excavators)

Docks and Harbor Work
Parsons, Klapp, Brinkerhoff & Douglass
Raymond Concrete Pile Co.
Snare Corp., Frederick

Doors & Shutters, Steel Rolling
Peelle Company, The

Drafting Machines
Universal Drafting Mch. Co.

Drafting Room Furniture and Supplies
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Pease Co., C. F.

Draglines
Bucyrus Company
Northwest Engr. Co.
Universal Crane Co.

Drawing Instruments
Pease Co., The C. F.

Drawing Materials
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Keuffel & Esser Co.
Pease Co., The C. F.
Wood-Regan Instr. Co.

Drawing Tables
(See Tables and Bds. Drg.)

Dredges
Bay City Dredge Works
Bucyrus Company
Hayward Co.
Lidgerwood Mfg. Co.
Marion Steam Shovel Co.
Vulcan Iron Works, N. J.

Dredges, Dipper
Austin Mchy. Corp.
Bucyrus Company
Erie Steam Shovel Co.

Dredges, Hydraulic
Atlantic Gulf & Pacific Co.
Bucyrus Company
Marion Steam Shovel Co.

Drills, Core
Ingersoll-Rand Co.
Keystone Driller Co.
McKiernan-Terry Drill Co.
Sullivan Mchy. Co.

Drills, Rock
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
McKiernan-Terry Drill Co.
Rix Compressed Air & Drill Co.
Sullivan Mchy. Co.

Drums, Holding
Blaw-Knox Co.
Haiss Mfg. Co., Inc., Geo.
Hayward Co.

Dryers
Blaw-Knox Co.

Dryers, Sand and Gravel
Vulcan Iron Works of Pa.

Dump Bodies
N. Y. Central Iron Works Co.

Economizers
Power Specialty Co.

Elevators, Bucket
Austin Manuf. Co.
Austin-Western Rd. Mch. Co.
Brown Hoisting Mchy. Co.
Haiss Mfg. Co., Inc., Geo.
Hendrick Mfg. Co.
Monighan Mach. Co.
Nelson Iron Works, N. P.
Ohio Locomotive Crane Co.
Smith Engineering Works
Webster Mfg. Co.

Elevators; Contractors' Material
Archer Iron Works
Austin Manuf. Co.
Austin-Western Rd. Mch. Co.

Columbia Dry Batteries

—they last longer

Columbia Hot Shot Batteries contain 4, 5 or 6 Columbia Igniters in series in a neat, waterproof steel case.

Fahnestock Spring Clip Binding Posts on Columbia Igniter at no extra cost to you.

Ignition Service Everywhere

for

—Gas engine ignition
—Tractor ignition
—Starting Fords
—Firing blasts
—Heat regulators
—Doorbells
—Buzzers
—Ringing burglar alarms
—Protecting bank vaults
—Calling Pullman porters
—Motor boat ignition
—Telephone and telegraph
—Lighting tents and outbuildings
—Electric clocks
—Running toys
—Radio "A"

CRACKLING hot sparks in the cylinder—putt-putt-putt says the engine as it turns the concrete mixer or air compressor.

Columbia Hot Shot hits hard in all weathers. This very minute in every State it is helping dig ditches, run roads, build buildings. Its power gives new push to pistons. Construction thrives where Columbias run engines, fire blasts, operate telephones, ring bells and buzz buzzers.

No matter where the job, there is a Columbia dealer nearby. Any hardware, electrical shop or general store can fix you up with new strong-arm Columbias.

Columbia Dry Batteries are sold by electrical, hardware, radio and auto accessory shops, marine supply dealers, implement dealers, garages, general stores. Insist upon Columbias.

NATIONAL CARBON COMPANY, INC.
New York San Francisco

Canadian National Carbon Co., Limited
Factory and Offices: Toronto, Ontario

Barber-Greene Co.
Clyde Iron Works Sales Co.
Haiss Mfg. Co., Inc., Geo.
Insley Mfg. Co.
Leach Company
Ransome Concrete Mchy. Co
Smith Engineering Works
Thomas Elevator Co.

Elevators, Factory
N. J. Foundry & Mch. Co.
Pidgway & Son Co., Craige

Engineers, Roofing
Federal Cement Tile Co.
Marks Corp., The H. E.
U. S. Gypsum Co.

Engineers
(See also Directory of Engineers)
Atlantic Gulf & Pacific Co.
MacArthur Conc. Pile & Foundation Co
Parsons, Klapp, Brinckerhoff & Douglas
Raymond Concrete Pile Co.
Spencer, White & Prentis
Stone & Webster, Inc.
Terry & Tench Co., Inc.

Engineers' and Draftsmen's Instruments and Supplies
Beckmann Co., L.
Dietzgen Co., Eugene
Hamilton Mfg. Co.
Gurley, W. & L. E.
Keuffel & Esser Co.
Lufkin Rule Co.
Weber Co., The F.
Wiebush & Hilger, Ltd.
Wood-Regan Instr. Co.

Engines, Gas, Gasoline & Oil
Allis-Chalmers Mfg. Co.
Buda Company
Chicago Pneumatic Tool Co.
Climax Engr. Co.
Hercules Motors Corp.
Ingersoll-Rand Co.
National Meter Co.
Otis Engine Corp.
Schramm, Inc.
Standard Scale & Supply Co
Worthington Pump & Mchy. Corp.

Engines, Hoisting
(See Hoists)

Engines, Portable
Climax Engr. Co.

Engines, Steam
Chicago Pneumatic Tool Co.

Engines, Traction
Best Tractor Co., C. L.

Excavator, Cableway
Clyde Iron Works Sales Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist. Eng. Co., J. S.
Sauerman Bros.

Excavators, Ditch & Trench
Austin Mchy. Corp.
Bay City Dredge Works
Buckeye Tract. Ditcher Co.
Erie Steam Shovel Co.
Keystone Driller Co.
Marion Steam Shovel Co.
Moore Trench Mch. Co.
Northwest Engr. Co.
Parsons Co.
Pawling & Harnischfeger Co.
Thew Shovel Co.

Excavators, Dragline
Austin Machinery Corp.
Bay City Dredge Works
Bucyrus Company
Erie Steam Shovel Co.
Hayward Co.
Marion Steam Shovel Co.
McMyler-Interstate Co.
Mead-Morrison Mfg. Co.
Northwest Engr. Co.
Pawling & Harnischfeger Co.
Sauerman Bros.

Expanded Metal
Berger Mfg. Co.
Consolidated Expanded Metal Cos.
Northwestern Expanded Metal Co.
Truscon Steel Co.

Expansion Bolts
National Lead Co.

Filters, Water, Municipal and Industrial
Amer. Water Softener Co.
California Filter Co.
Leopold Co., F. B.
Norwood Engr. Co.
Roberts Filter Mfg. Co.

Fireproofing Material & Construction
Berger Mfg. Co.
Marks Corp., H. E.
Northwestern Expanded Metal Co.
Peelle Company, The
Truscon Steel Co.

Floor, Asphalt Mastic
Standard Oil Co. of N. Y. Texas Co., The

Floor Hardener, Concrete
(See Conc. Floor Hardener)

Floor, Wood Block
Jennison-Wright Co.
Republic Creosoting Co.

Flooring, Fireproof
Alan Wood Iron & Steel Co.
Irving Iron Works
Kerlow Steel Flooring Co.
Marks Corp., H. E.
Universal Safety Tread Co.

Flumes
Continental Pipe Mfg. Co.

Flumes, Iron & Steel
Armco Culvert & Flume Mfrs. Assn.
Blaw-Knox Co.
Hardesty Mfg. Co., R.

Forgings
Bethlehem Steel Co.
Carnegie Steel Co.

Form Clamps
Concrete Steel Co.
Insley Mfg. Co.
Pyle-Rogers Corp.
Universal Form Clamp Co.

Form Tighteners
Concrete Steel Co.
Marion Malleable Iron Wks.

Forms, Culvert, Road, Sewer, Tunnel, etc.
Blaw-Knox Co.
Heltzel Steel Form & Ir. Co
Lakewood Engr. Co.

Forms for Curb and Gutter
Blaw-Knox Co
Heltzel Steel Form & Ir. Co.

Forms for Walls, Building Construction, etc.
Berger Mfg. Co.
Blaw-Knox Co.
Concrete Steel Co.
Heltzel Steel Form & Ir. Co.

Foundations
MacArthur Concrete Pile & Foundation Co.
Raymond Concrete Pile Co.
Simplex Concrete Pile Assn.
Spencer, White & Prentis.
Underpinning & Found. Co.

Frogs and Switches, Railway
Bethlehem Steel Co.
Foster Co., L. B.
Ramapo Ajax Corp.

Furnaces, Annealing & Tempering
American Bridge Co.

Gas Holders
Chicago Bridge & Iron Wks.

Gas Producers
Blaw-Knox Co.

Gates, Sluice
Chapman Valve Mfg. Co.
Coffin Valve Co.
Coldwell-Wilcox Co.
Hardesty Mfg. Co., R.

Gauges, Loss of Head
Simplex Valve & Meter Co

Gauges, Pressure
Jones, McKee, Inc.

Gauges, Rates of Flow
Simplex Valve & Meter Co.

Gears
Earle Gear & Mach. Co.

Generators, Electric
Allis-Chalmers Mfg. Co.

Glass, Fireproof
(See Wire Glass)

Governors, Waterwheel
Woodward Governor Co.
Worthington Pump & Machy. Corp.

Graders, Road
Adams & Co., J. D.
Austin Manuf. Co.
Austin-Western Rd. Mchy. Co.
Erie Steam Shovel Co.
Good Roads Mchy. Co.
Hadfield-Penfield Steel Co.
Western Wheeled Scraper Co.

Granite
Granite Paving Block Mfrs. Assn. of U. S.

Gratings, Safety
Irving Iron Works
Kerlow Steel Flooring Co.
Mitchell-Tappen Co.
Universal Safety Tread Co.

Gravel Washing Plants
Sauerman Bros.

Grouting
Weber Engineering Co.

Gypsum
Keystone Gypsum Fireproofing Co.
Marks Corp., H. E.
U. S. Gypsum Co.

Hammers, Pneumatic
Chicago Pneumatic Tool Co.

Hammers, Steam Pile
(See Pile Hammers, Steam)

Heaters, Oil
Power Specialty Co.

Heaters, Tar & Asphalt
Honhorst Co., The Jos.
Littleford Bros.

Hoists, Concrete Tower
Archer Iron Works
Clyde Iron Works Sales Co.
Insley Manufacturing Co.
Lakewood Engr. Co.
Mead-Morrison Mfg. Co.
National Hoisting Eng. Co.
Thomas Elevator Co.

Hoists, Contractors' Electric
Allis-Chalmers Mfg. Co.
Bay City Dredge Works
Clyde Iron Works Sales Co.
Dobbie Foundry & Mach. Co.
Flory Mfg. Co., S.
Ferguson & Son, F.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist. Eng. Co., J. S.
National Hoisting Eng. Co.
Northern Engineering Wks.
Orr & Sembower, Inc.
Porter Co., H. K.
Ransome Con. Mchy. Co.
Stroudsburg Engine Works
Thomas Elevator Co.
United Iron Works, Inc.
Van Dorn Iron Works Co.
Vulcan Iron Works of Pa.

Hoists, Contractors' Gasoline
Clyde Iron Works Sales Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist. Eng. Co., J. S.
National Hoisting Eng. Co.
Otis Engine Corp.
Schramm, Inc.
Stroudsburg Engine Works
Thomas Elevator Co.

Hoists, Contractors' Steam
Allis-Chalmers Mfg. Co.
Clyde Iron Works Sales Co.
Ingersoll-Rand Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoist Eng. Co., J. S.
National Hoisting Eng. Co.
Orr & Sembower, Inc.
Stroudsburg Engine Works
Thomas Elevator Co.
Vulcan Iron Works of Pa.

Hoists, Hydraulic Head Gates
Dilts Machine Wks., Inc.

Hoists, Motor, Truck
Mead-Morrison Mfg. Co.

Hoists, Pneumatic
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Stroudsburg Engine Works
Sullivan Machinery Co.
Whiting Corporation

Hoists, Skip
Mead-Morrison Mfg. Co.
Thomas Elevator Co.
Nelson Iron Works, N. P.

Hoppers, Concrete
Insley Manufacturing Co.
Ransome Concrete Mchy. Co.

Hoppers, Steel
Archer Iron Works
Heltzel Steel Form & Ir. Co.
Honhorst Co., The Jos.
Littleford Bros.

Hose, Steam, Air & Water
Chicago Pneumatic Tool Co.
Goodall Rubber Co.

Hydrants
Chapman Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Smith Mfg. Co., A. P.
Wood & Co., R. D.

Inserts, Concrete
Concrete Steel Co.
Truscon Steel Co.

Inspecting Laboratories
(See Directory of Engineers)

Instruments, Drawing
Keuffel & Esser Co.

Instruments, Surveying
Brandis & Sons
Ainsworth & Sons, Wm.
Berger & Sons, C. L.
Buff & Buff Mfg. Co.
Gurley, W. & L. E.
Keuffel & Esser Co.
Lietz Co., A
Weber Co., The F.

Insulation, Misc.
Texas Co., The

Iron Work, Structural and Ornamental
Hendrick Mfg. Co.
Irving Iron Works Co.
Kerlow Steel Flooring Co.
Ryerson & Son, Jos. T.
Snead Architect. Iron Wks
Universal Safety Tread Co.

Jacks, Lifting
McKiernan-Terry Drill Co.
Norton, Inc., A. O.
Roos Company, H. W.

Joints, Expansion Paving
Carey Co., The Philip

Joints, Filler Paving
Standard Oil Co. of N. Y. Texas Co., The

Joints, Flexible Pipe
Central Foundry Co.
U. S. Cast Ir. Pipe & Fdy. Co.

Kilns, Rotary
Vulcan Iron Works of Pa.

Ladder Steps, Steel
Irving Iron Wks. Co.

Lath, Expanded Metal
Armco Culvert & Flume Mfrs. Assn.
Berger Mfg. Co.
Mitchell-Tappen Co.
Northwest'n Exp. Metal Co.
Truscon Steel Co.

Leadite
Leadite Co., Inc., The

Lights, Contractors'
Carbic Manufacturing Co.
Pyle-National Co.

Loaders, Car & Wagon
Austin Machinery Corp.
Austin Manuf. Co.
Austin Western Rd Mch. Co.
Barber-Greene Co.
Erie Steam Shovel Co.
Haiss Mfg. Co., Inc., Geo.
Nelson Iron Works, N. P.
Specialty Engr. Co.

Locomotives, Compressed Air
Baldwin Locomotive Co.
Porter Co., H. K.

Locomotives, Electric
Baldwin Locomotive Co.

Locomotives, Fireless Steam
Porter Co., H. K.

Locomotives, Gasoline
Baldwin Locomotive Co.
Fate Root Heath Co.
Hadfield-Penfield Steel Co.
Milwaukee Loco. Mfg. Co.
Vulcan Iron Works of Pa.

Locomotives, Steam
Baldwin Locomotive Co.
Davenport Locomotive Wks.
Koppel Indust. Car & Equip. Co.
Porter Co., H. K.
Vulcan Iron Works of Pa.

Lubricants
Texas Co., The

Lumber
Eppinger & Russell Co.
Lawson & MacMurray

Manhole Covers
Central Foundry Co.

Manometers
Simplex Valve & Meter Co.

Meter Boxes
Pittsburgh Meter Co.

Meter Provers
Hersey Manuf. Co.
Pittsburgh Meter Co.

Meters, Boiler Feed Water
Builders Iron Foundry

Meters, Current
Gurley, W. & L. E.

Meters, Gas and Steam
Builders Iron Foundry
National Meter Co.
Wallace & Tiernan Co., Inc.

Meters, Venturi
Builders Iron Foundry

Meters, Water, Oil, etc.
Builders Iron Foundry
Gamon Meter Co.
Hersey Manuf. Co.
National Meter Co.
Neptune Meter Co.
Pittsburgh Meter Co.
Simplex Valve & Meter Co.
Thomson Meter Co.
Worthington Pump & Machy. Corp.

Mixers, Asphalt
(See Mixers, Hot)

Mixers, Concrete
Archer Iron Works
Austin Machinery Corp.
Cement-Gun Co.
Lakewood Engineering Co.
Leach Company
Orr-Sembower, Inc.
Ransome Concrete Mchy. Co.
Schramm, Inc.
Standard Scale & Supply Co.

Mixers, Grout
Austin Machinery Corp.
Leach Company
Ransome Concrete Mchy. Co.
Union Iron Works

Mixers, Hot
Austin Machinery Corp.

Mixers, Mortar
Austin Machinery Corp.
Leach Company
Ransome Concrete Mchy. Co.

Mixers, Paving
Austin Machinery Corp.
Ransome Concrete Mchy. Co

Mixers, Pneumatic
Ransome Concrete Mchy Co.

Mortar
Carney Company

Motors, Electric
Allis-Chalmers Mfg. Co.

Motors, Gasoline
Buda Company
Hercules Motors Corp.

Motor-Truck Bodies
N. Y. Central Iron Wks. Co.
Van Dorn Iron Works Co.

Motor Trucks
(See Trucks, Motor)

Nitrogen Gas
Linde Air Prods. Co.

Oil Clothing
Goodall Rubber Co.

Oil Lubricating
Texas Co., The

Oxy-Acetylene Apparatus
Blaw-Knox Co.

Oxygen Gas
Linde Air Prods. Co.

Packing
Goodall Rubber Co.
Jenkins Bros.

Paints, Graphite
Truscon Laboratories

Paints, Light Reflecting
Truscon Laboratories

Paints, Metal Protective
Carey Co., The Philip
National Lead Co.
Protexol Corp.
Truscon Laboratories

Partitions
U. S. Gypsum Co.

Pavement Breakers
Buckeye Tract. Ditcher Co.

Paving, Asphalt
Carey Co., Philip
Standard Oil Co. of N. Y. Texas Co., The

Paving Blocks, Creosoted Wood
(See Creosoted Block Timber, Poles, Cross-Arms, Lumber)

Paving Blocks, Granite
Granite Paving Block Mfrs.

Paving Breakers
Ingersoll-Rand Co.

Paving, Cold Patching
Standard Oil Co. of N. Y. Texas Co., The

Paving Guards, Steel
Godwin Co., Inc., W. S.

Penstocks
Blaw-Knox Co.
Chicago Bridge & Iron Wks.

Pile Drivers
Industrial Works
McKiernan-Terry Drill Co.
McMyler Interstate Co.
Union Iron Works

Pile Hammers, Steam
Industrial Works
McKiernan-Terry Drill Co.
National Hoisting Eng. Co.
Union Iron Works
Vulcan Iron Works of Chic.

Piles, Concrete
MacArthur Concrete Pile & Foundation Co.
Raymond Concrete Pile Co.
Simplex Concrete Pile Co.
Spencer, White & Prentis

Piles, Creosoted Wood
Jennison-Wright Co.

Piling, Interlocking Steel
Bethlehem Steel Co.
Carnegie Steel Co.

Pipe, Bends
East Jersey Pipe Co.
National Valve Mfg. Co.

Pipe, Cast Iron
Amer. Cast Iron Pipe Co.
Central Foundry Co.
Fox & Co., John
Glamergan Pipe & Fdry. Co.
McWane Cast Iron Pipe Co.
Nat'l Cast Iron Pipe Co.
U. S. Cast Ir. Pipe & Fdry. Co.
Warren Fdry. & Pipe Co.
Wood & Co., R. D.

Pipe, Concrete
Lock Joint Pipe Co.
Newark Concrete Pipe Co.

Pipe, Corrugated
Austin-Western Rd. Mch. Co.
Canton Culvert & Silo Co.
Hardesty Mfg. Co., The R.

Pipe Covering, Asbestos
Carey Co., The Philip

Pipe Covering, Wood
Michigan Pipe Co.
Standard Wood Pipe Co.
Wyckoff & Son Co., A.

Pipe Fittings
Builders Iron Foundry
Central Foundry Co.
U.S. Cast Ir. Pipe & Fdy. Co.

Pipe Joint Compounds
Leadite Co., Inc., The

Pipe, Lock Bar
East Jersey Pipe Co.

Pipe, Lock Joint
Lock Joint Pipe Co.

Pipe, Reinforced Concrete
Newark Concrete Pipe Co

Pipe, Riveted Steel
American Spiral Pipe Wks
Blaw-Knox Co.
East Jersey Pipe Co.
Hardesty Mfg. Co., The R.
Petroleum Iron Works Co
Tippett & Wood

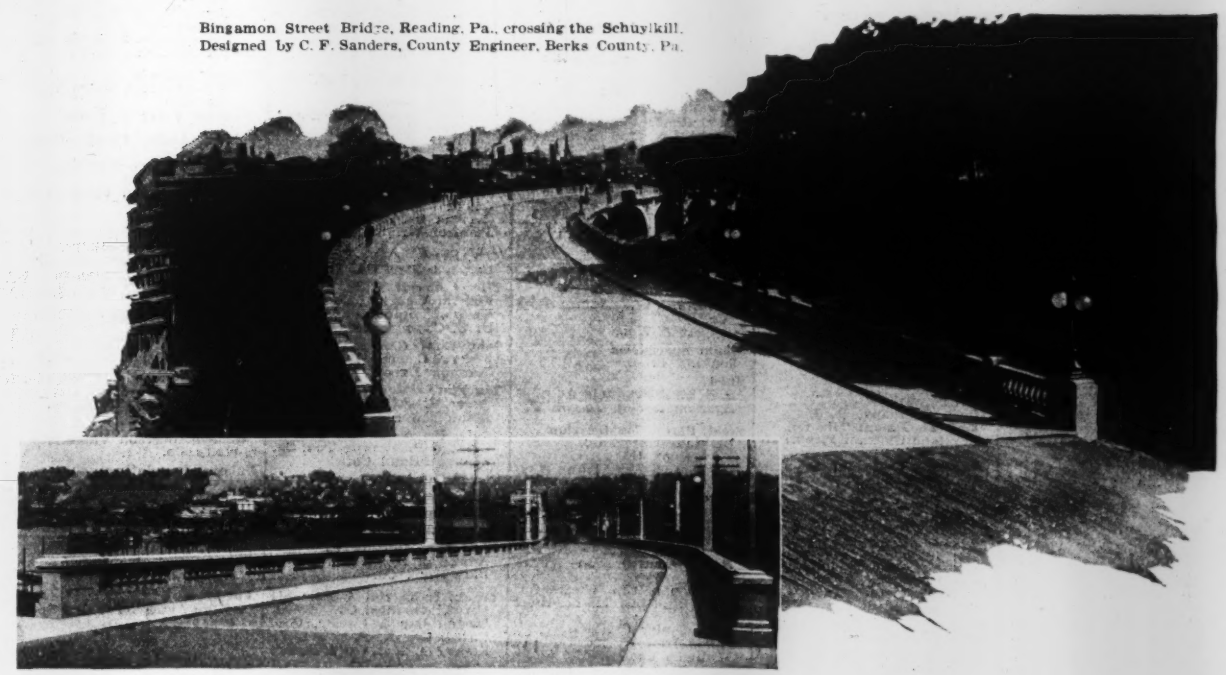
Pipe, Sewer
Dickey Clay Mfg. Co.

Pipe Shoes
Marion Malleable Iron Wks.

Pipe, Spiral
Abendroth & Root Mfg. Co.
American Spiral Pipe Wks.
Blaw-Knox Co.

Pipe, Tap Welded
American Spiral Pipe Wks.

Bingamon Street Bridge, Reading, Pa., crossing the Schuylkill.
Designed by C. F. Sanders, County Engineer, Berks County, Pa.



Bridge at Olympia, Wash. Elastite Expansion Joint used.

Protecting great bridges against temperature

TEMPERATURE fluctuation, and the consequent expanding and contracting of these great concrete masses, are rendered harmless to the durability of big bridges and viaducts by the installation of Elastite Expansion Joint at regular intervals.

The fact that Elastite Expansion Joint, "the sandwich joint," is handled as a slab, in any dimension and thickness, makes installation comparatively simple and easy. It is the practical joint used exclusively by practical engineers and contractors. It is easily cut to shape with an old saw, or can be supplied cut to exact fit to meet your requirements.

When you need "joint," remember that there are big stocks of Elastite Expansion Joint in seventeen cities. Your order will be immediately shipped to your job from the nearest point. Send for sample and all the facts.

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Pulaski, New York — Salmon River Bridge
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Standard Wood Pipe Co.
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Pipe, Wrought Iron
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Poles, Steel Structural
Blaw-Knox Co.

Pressed Steel Products
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Van Dorn Iron Works Co.

Pullers, Car
Mead-Morrison Mfg. Co.

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Ingersoll-Rand Co.
Sullivan Machinery Co.

Pumps, Boiler Feed, Steam
Earle Gear & Machine Co.
Ingersoll-Rand Co.
McGowan Co., John H.

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Aldrich Pump Co., The
Aurora Pump & Mfg. Co.
De Laval Steam Turbine Co.
Earle Gear & Machine Co.
Ingersoll-Rand Co.
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Lecourtenay Co.
Manistee Iron Works
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United Iron Works, Inc.

Pumps, Contractors'
Ingersoll-Rand Co.
Pulsometer Steam Pump Co.
Schramm, Inc.
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Aurora Pump & Mfg. Co.
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Pumps, Diaphragm
Boston & Lockport Bl. Co.
Manistee Iron Works
Novo Engine Co.
Waldo Bros. & Bond Co.

Pumps, Dredging and Sand
Marion Steam Shovel Co.
Worthington Pump & Machy. Corp.

Pumps, Power
Cook, A. D.
Lecourtenay Co.
McGowan Co., John H.

Pumps, Underwriters' Centrifugal
Allis-Chalmers Mfg. Co.
Earle Gear & Machine Co.

Pumps, Water Work
McGowan Co., John H.

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Norwood Engr. Co.

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Foster Co., L. B.
Rail Joint Co.
Sweets Steel Co.

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Marion Steam Shovel Co.

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Concrete Steel Co.
Marion Malleable Iron Wks.

Reinforcing Concrete
(See Conc. Reinforcement)

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Amer. Steel & Wire Co.
Berger Mfg. Co.
Concrete Steel Co.
Kalman Steel Co.
Northwestern Expanded Metal Co.
Truscon Steel Co.

Riveting Machines
Allen, John F.
Chicago Pneumatic Tool Co.

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Austin Machy. Corp.
Lakewood Engr. Co.

Road Oilers, Pressure
Austin-Western Rd. Mch.Co.

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Gilmore Oil Co.
Standard Oil Co. of N. Y.
Texas Co., The
Universal Road Machy. Co.

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Austin Manuf. Co.
Austin-Western Rd. Mch.Co.
Buffalo-Springfield Roll. Co.
Good Roads Mchy. Co.

Rolls, Crushing
Allis-Chalmers Mfg. Co.

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Dorn Company, R. J.

Roofing, Gypsum
Marks Corp., The H. E.
U. S. Gypsum Co.

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Amer. Sheet & Tin Plate Co.
Berger Mfg. Co.

Roofing, Prepared
Carey Co., The Philip
Texas Co., The

Roofing, Tile
Dorn Company, R. J.
Federal Cement Tile Co.
Keystone Gypsum Fireproofing Co.
Truscon Laboratories
U. S. Gypsum Co.

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American Steel & Wire Co.
Leschen & Sons Rope Co.
Roeblings Sons Co., J. A.

Sash Operating Apparatus
Allison Steel Products Co.
Truscon Steel Co.

Sash Steel, Window
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Saw Rigs, Portable
Leach Company

Scales, Automatic
Toledo Scale Co.

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Scrapers, Scarifiers, Plows
Adams & Co., J. D.
Austin Manuf. Co.
Austin-Western Rd. Mch.Co.
Western Wheeled Scraper Co.

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Austin Western Rd. Mch. Co.
Good Roads Mchy. Co.

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Austin Manuf. Co.
Austin-Western Rd. Mch.Co.
Haiss Mfg. Co., Inc., Geo.
Hendrick Mfg. Co.
Smith Engineering Works

Second-Hand Equipment
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Wallace & Tiernan Co., Inc.

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Ryerson & Son, Joseph T.

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Ingersoll-Rand Co.

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Shingles, Zinc
Illinois Zinc Co.

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Roos Co., H. W.
Roos-Meyer-Hecht Co.

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Bucyrus Company.

Shovels, Electric
Bucyrus Company
Erie Steam Shovel Co.
Keystone Driller Co.
Marion Steam Shovel Co.
Pawling & Harnischfeger Co.
Thew Shovel Co.

Shovels, Gasoline
Bucyrus Company.
Marion Steam Shovel Co.
Northwest Engr. Co.
Pawling & Harnischfeger Co.
Thew Shovel Co.

Shovels, Steam
Bucyrus Company
Erie Steam Shovel Co.
Keystone Driller Co.
Marion Steam Shovel Co.
Thew Shovel Co.

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Insley Manufacturing Co.

Slabs, Cement Roofing
Federal Cement Tile Co.

Slag
Carnegie Steel Co.

Snow Plows
Good Roads Mchy. Co.
Hadfield-Penfield Steel Co.

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Bucyrus Company

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Austin-Western Rd. Mch.Co.

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Blaw-Knox Co.
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Pittsburgh-Des Moines Steel Co.
Tippett & Wood

Steam Specialties
Jenkins Bros.

Steel
Rail Steel Products Assn.
Ryerson & Son, Joseph T.

Steel Plate Construction
Bethlehem Steel Co.
Blaw-Knox Co.
Chicago Bridge Iron Wks.
East Jersey Pipe Co.
Heltzel Steel Form & Tr. Co.
Honhorst Co., The Jos.
Littleford Bros.
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N. Y. Central Iron Works Co.
Petroleum Iron Works Co.
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Riter-Conley Co.
Union Iron Works
Williams Co., G. H.

Steel, Rock Drill
Ingersoll-Rand Co.

Steel, Structural
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Berlin Construction Co.
Bethlehem Steel Co.
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Boston Bridge Works
Carnegie Steel Co.
Eastern Bridge & Struc. Co.
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Phoenix Bridge Co.
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Shoemaker Bridge Co.
Snare Corp., Frederick
Snead Architect. Iron Wks.
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Wisconsin Bridge & Iron Co.

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Ryerson & Son Co., Jos. T.

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Cook, A. D.

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East Jersey Pipe Co.

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Blaw-Knox Co.
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N. Y. Central Iron Works Co.
Riter-Conley Co.

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Dickey Clay Mfg. Co.

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Hardesty Mfg. Co., The R.
Littleford Bros.

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Dietzgen Co., Eugene
Hamilton Mfg. Co.
Keuffel & Esser Co.
Lufkin Rule Co.
Wiebush & Hilger, Ltd.

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Pittsburg Testing Lab.

Thermometers
Taylor Instruments Cos.

Ties, Creosoted Wood
Amer. Creosoting Co. (Ky.)
Colonial Creosoting Co.
Georgia Creosoting Co.
Jennison-Wright Co.

Ties, Steel
Carnegie Steel Co.

Tile, Concrete Bldg.
Federal Cement Tile Co.
Truscon Laboratories
U. S. Gypsum Co.

Tile, Roof Cement
Federal Cement Tile Co.
Truscon Laboratories

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Amer. Sheet & Tin Plate Co.
Bethlehem Steel Co.

Tools, Pneumatic
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.

Towers, Concrete
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Towers, Radio
Blaw-Knox Co.

Towers, Transmission
American Bridge Co.
Blaw-Knox Co.

Track, Industrial & Portable
Bethlehem Steel Co.
Easton Car & Constr. Co.
Foster Co., L. B.
Koppel Indust. Car & Equip. Co.
Lakewood Engr. Co.
Sweets Steel Co.

Traction, Alligator
Buckeye Tract. Ditcher Co.

Tractors
Best Tractor Co., C. L.
Eagle Wagon Works
Ford Motor Co.
Minne. Steel & Mchy. Co.

Trailers
Eagle Wagon Works
Watson Truck Corp.

Transits and Levels
Ainsworth & Sons, Wm.
Beckmann Co., L.
Berger & Sons Co., C. L.
Brandis & Sons
Buff & Buff Mfg. Co.
Gurley, W. & L. E.
Lietz Co., A.

Treads, Safety
Concrete Steel Co.
Irving Iron Works
Kerlow Steel Flooring Co.
Truscon Steel Co.
Universal Safety Tread Co.

Treads, Traffic Steel
Alan Wood, Iron & Steel Co.

Trolleys, I-Beam
Brown Hoisting Machy. Co.

Trucks, Motor
Eagle Wagon Works
Ford Motor Co.
Watson Truck Corp.

Tunnel Liner Plates
Blaw-Knox Co.

Turbines, Hydraulic Impulse and Reaction
Allis-Chalmers Mfg. Co.
Pelton Water Wheel Co.
Smith Co., S. Morgan
Worthington Pump & Machy. Corp.

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Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.

Turbo-Generators, Steam
Pyle-National Co.

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American Bridge Co.
Blaw-Knox Co.
Easton Car & Constr. Co.
Foster Co., L. B.

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Spencer White & Prentis
Underpinning & Found. Co.

Unloaders, Car & Wagon
Erie Steam Shovel Co.
Haiss Mfg. Co., Geo.
Heltzel Steel Form &Ir. Co.
Nelson Iron Works, N. P.

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Chapman Valve Mfg. Co.
Coffin Valve Co.
Golden-Anderson Valve Specialty Co.
Jones, McKee, Inc.
Ludlow Valve Mfg. Co.
National Valve Mfg. Co.
Norwood Engr. Co.
Simplex Valve & Meter Co.
Smith Mfg. Co., A. P.

Valves, Altitude
Golden-Anderson Valve Specialty Co.
Ludlow Valve Mfg. Co.

Valves, Angle, Check, Gate and Globe
Chapman Valve Mfg. Co.
Coffin Valve Co.
Golden-Anderson Valve Specialty Co.
Jenkins Bros.
Ludlow Valve Mfg. Co.
National Valve Mfg. Co.
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Valves, Automatic
Golden-Anderson Valve Specialty Co.
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Valves, Control Electric
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Dean, Ltd., Payne
Chapman Valve Mfg. Co.

Valves, Float
Golden-Anderson Valve Specialty Co.

Valves, Regulating
Golden-Anderson Valve Specialty Co.
Ludlow Valve Mfg. Co.
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Valves, Return
Golden-Anderson Valve Specialty Co.

Valves, Safety
Golden-Anderson Valve Specialty Co.

Valves, Sewage
Chapman Valve Mfg. Co.

Valves, Sluice
Chapman Valve Mfg. Co.
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Wagons, Asphalt
Eagle Wagon Works
Watson Truck Corp.

Wagons, Dump, Auto
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Austin-Western Rd. Mch.Co.
Eagle Wagon Works

Wagons, Dump
Austin Manuf. Co.
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Watson Truck Corp.

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Smith Engineering Works

Water-Main Cleaning
Nat'l Water Main Clean. Co.

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Anti-Hydro Waterproof. Co.
Carey Co., The Philip
General Chemical Co.
Texas Co., The
Truscon Laboratories

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Electro Bleach. Gas Co.
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Amer. Water Softener Co.
California Filter Co.
Graver Corporation
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Pelton Water Wheel Co.
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Winches, Ship, Hand, Steam and Electric
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Dobbie Frdy. & Mach. Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoisting Eng. Co.J.S.

Window Sash Putty
Truscon Laboratories

Window Sash Steel
Allison Steel Products Co.
Truscon Steel Co.

Wire Glass
Mississippi Wire Glass Co.

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Wire Rope, Fittings
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American Steel & Wire Co.

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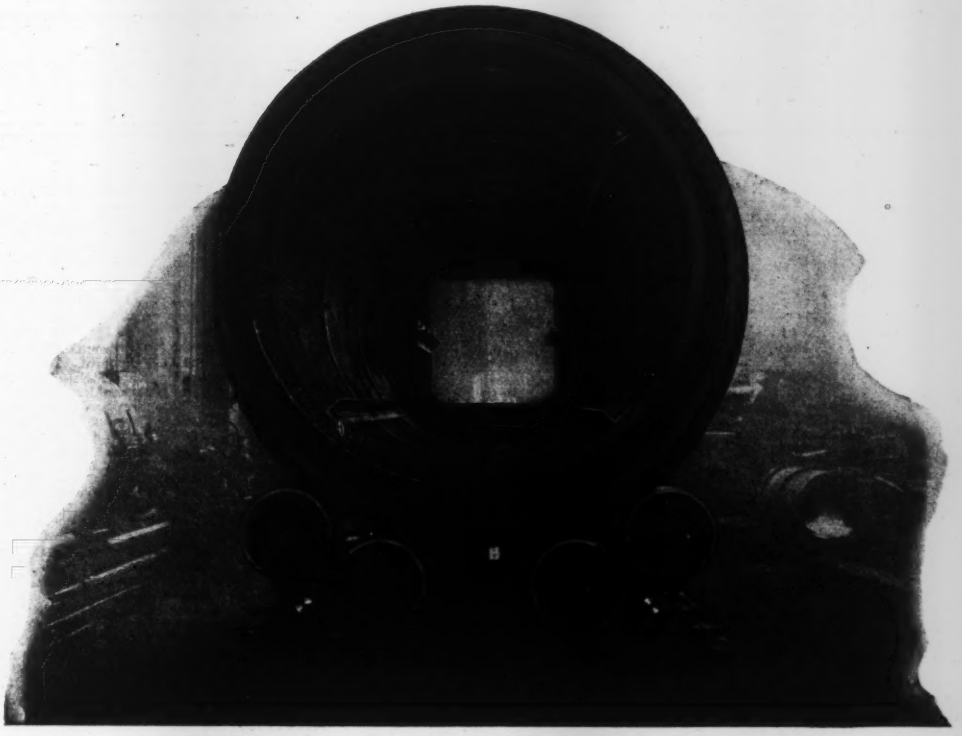

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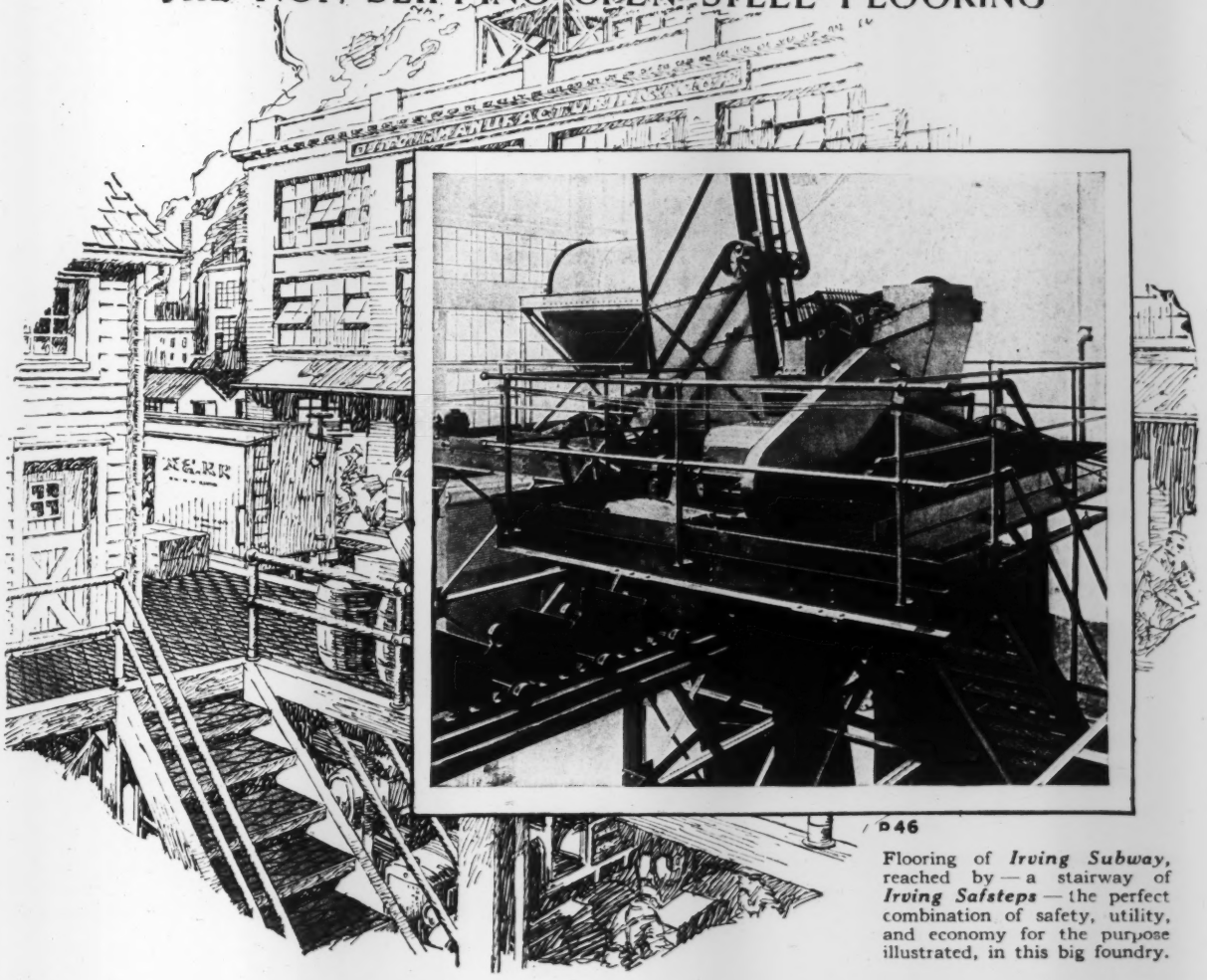
IRVING SUBWAY

TRADE MARK

PATENTED REG. U.S. PAT. OFF.

THE NON-SLIPPING OPEN-STEEL FLOORING



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Flooring of ***Irving Subway***, reached by — a stairway of ***Irving Safsteps*** — the perfect combination of safety, utility, and economy for the purpose illustrated, in this big foundry.

On a hard, cold, dollar-and-cents basis—the cost per square foot per year of service—***Irving Subway*** is the cheapest flooring you can use, anywhere, for any industrial purpose—except where a solid floor is absolutely needed. When you build for permanence and seek a flooring that has every quality making for underfoot safety and comfort and efficiency, plus economy, ***Subway***—and ***Safsteps*** for the stairs—is the thing to use.

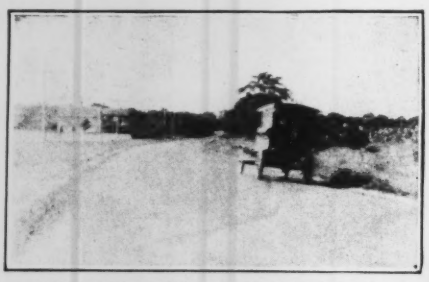
There's probably not an industry in America which isn't, somewhere, using ***Subway*** and ***Safsteps*** to advantage. And, to the millions of square feet of ***Subway*** and the thousands of ***Safsteps*** already installed, will be added more millions and more thousands, as the engineering and industrial world comes to a better appreciation of the unmatched, and unmatchable, superiorities of this all-steel open safety flooring. We want to send you Catalog 4A-5.

IRVING IRON WORKS CO.

LONG ISLAND CITY, N.Y. U.S.A.

LONG ISLAND'S
FAMOUS OILED ROADS
Are treated with

A section of the highway between Watermill and Southampton, L. I., which has been treated with TEXACO Road Oil.



View of the well-known Merrick Road on Long Island. Note the smoothness of the TEXACO oiled surface.

American Road Builders in all sections are talking of the marvelous TEXACO oiled roads of Long Island, N. Y.

Federal, State, County and City engineers are discussing the results which Long Island has obtained. Many highway officials and administrators are planning to follow the methods so successfully pursued by Long Island for the past several years.

We are proud that TEXACO Asphaltic Road Oil has rendered such service to Long Island.

Call on any office of the Texas Company, Asphalt Sales Department, for information on how Long Island has used TEXACO Road Oil to such advantage.

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